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BRAITHWAITE'S RETROSPECT.

VOL. XII. JULY—DECEMBER, 1845.

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THE RETROSPECT

OF

PRACTICAL MEDICINE AND SURGERY,

BEING A

HALF-YEARLY JOURNAL,

CONTAINING A RETROSPECTIVE VIEW OF EVERY DISCOVERY AND PRACTICAL IMPROVEMENT IN THE MEDICAL SCIENCES.

EDITED BY

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VOL. XII. JULY—DECEMBER,

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PREFACE.

The papers in the different Medical Journals have lately increased so much in value, number, and extent, that we have been obliged to enlarge the size of the present volume, in order to do them justice. For the same reason, we have been compelled to add sixpence to the price.

We have also been so much pressed for space and time, that we have omitted our usual Retrospective Summary, although the manuscript was quite ready. The omission of this is, perhaps, of little consequence, and we have often thought that it was a needless repetition. Such retrospective addresses, to say the least of them, however comprehensive and general they may be, seldom satisfy the reader on any one subject to which they refer. Generally speaking, they are little better than copious indices: they give us a slight taste of the original article, leaving us after all to refer to the book or journal from which it is obtained, for further information. The wine may be good, but we are only allowed to wet our lips.

In our next volume we hope to be able to give another *General Index* to the preceding four volumes of the Retrospect, which, with the one in Vol. 9, will enable the reader to turn to almost every article of practical value published since the year 1840.

As our work becomes larger and altogether more comprehensive, these general indices will be more and more valuable. We sometime ago commenced a General Index to all the Medical Journals of Great Britain, Ireland, and most of those of America, published

since 1840. We intended to publish one of these important works every five years, embracing every original article. We have already completed this index for the first two or three years, but found the work too laborious, and at present, incompatible with our other engagements. We do not, however, despair of filling up this desideratum in Medical literature: and we hesitate not to say that a medical man in the possession of such a reference, and a good library of Medical Journals, will have as complete a set of treatises as can possibly be obtained, attended with the advantage of always keeping pace with the most modern experience, and embracing the views of all or most of our talented contemporaries.

Park Square, Leeds,
Dec. 20, 1845.

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ADDENDA.

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PRACTICAL MEDICINE,

&c. &c.

FEVERS.

Article 1.—ON SCARLATINA.

By Sir G. Lefevre, M.D.

[The art of medicine is often branded as being stationary, whilst others, with surgery amongst the number, continue in a steady onward march of improvement. Were this even true, we might justly reply that, between Physic and Surgery the difference is really very indefinite, and that, as far as pathology is concerned, they are one and indivisible.

It would be difficult to select a disease which seems better to justify this opprobrium than scarlatina, which, from its mode of attack, progress, and after effects, is admirably adapted to illustrate the effects of a numerous group of morbid poisons.

It not unfrequently happens that the attack is so slight as scarcely to excite attention, and the physician is only called in on account of the protracted convalescence: he then even finds it difficult to elicit the fact of there having been any rash at all. From this, however, some other member of the family may have a most malignant form of the disease, which again, when communicated to a third person, may be of as slight a character as the first.

The rapidity of cure is not always in proportion to the severity of the primary symptoms, the convalescence being often more protracted when the first stage is slight than when there is high febrile excitement to begin with.]

Various as the forms may be under which this disease presents itself to our notice, they are all modifications of the influence of one specific morbid poison in the animal economy. This is proved by the circumstance of their being convertible into each other; thus the mild may generate the simple, and this, again, the malignant form. Proofs of their identity are afforded in the circumstances that, in all, the epidermis or epithelium is first attacked; in all, there is precursory fever; in all, the cellular membrane is liable to inflammation and infiltration; all are propagated by contagion.

These matters will allow of a great deal of discussion, and the problems will be solved very differently, as mens' views themselves differ upon contested theories.

There is much room for conjecture as regards the communication of the disorder from one to the other, and the conversion of the species.

In many situations, where this malady seems to be of endemic origin, there is no recognisable period of limit to its attacks. When we find several members of a family falling ill at different periods, it is usual to suppose that they have taken the disease of each other in succession; but this is not necessarily implied. It is as rational to presume that those are affected by a new dose of the poison who fall sick at different periods, seeing that exposure to the contagion when at its height was not necessarily followed by any immediate impression; or we must come to the conclusion that the poison was shut up in the system, awaiting that combination of circumstances which was necessary for its development, and before the accomplishment of which it could exercise no specific power.

This is not a privilege usurped by this disease alone; there are manifold examples of the same occurrences. In the venereal disease, between the time of inoculation and the manifestation of the poisonous influence, there is an astounding latitude. John Hunter informs us of cases coming under his own cognizance where local disease had appeared twenty-four hours after the application of the poison; and others where seven weeks had elapsed before the effect could be recognised. This is a fact illustrative of a simply contagious disease: but whether contagion or infection be a point in question, it is matter in some shape which is communicated; it does not affect the argument whether it be in a denser or rarer form.

The greatest difficulty occurs in assigning rational causes for the wide differences which exist in the effects of the same poison upon various constitutions, and the circumstance of one species impinging in one form being reflected off in another; for we cannot always ascribe the difference of form to local influence, for a child, removed from one spot with the rash upon it, will communicate an aggravated species to those who are not within the pale of the endemic limits. We must remember, however, that this change of type is not peculiar to this poison. It is equally the property of the paludal miasms; for we find that an intermittent, a remittent, and a continued fever, arise from the operation of one and the same cause. This may be reduced, however, to the law of exceptions, and it will generally be found that like begets like, and that one type prevails in all epidemic maladies. It may hereafter be the triumph of animal chemistry to solve this Gordian knot. The atomic theory, the combination of bodies in definite proportions, may yet be applicable to morbid poisons. It has been asserted that if the virus of the small-pox be diluted with water, and this solution employed for inoculation, a milder kind of disease is generated. It may be fairly argued that condensation or inspissation of the morbid poison of scarlatina, or a mixture of it with other poisons, will be available causes of explanation for these dissimilar effects in many cases.

Dr. Gregory has tritely observed, that as the simple form requires no assistance from medicine, and the malignant is without the pale

of relief, our attention must naturally be concentrated to the consideration of the anginous species. I shall not trespass upon your time with any detail of those minutiæ with which you are so well acquainted, but touch upon a point of great importance, and, more than any other, characteristic of this disease. I allude to the elevation of animal temperature. Dr. Currie proved by actual admeasurement that it was greater by two degrees than was found in any other disease; and he states having seen it as high as 112° Fah. As we are all aware of the difference which exists between heat and the sensation of heat, as regards our feelings, it will be well to inquire if as much difference does not exist between caloric artificially applied and the morbid generation of heat in the system itself.

In the natural order of things, we find that animal heat is under the control of the nervous system; it rises or falls *pari passu* with the increased or depressed energies of this controlling power. It maintains its equilibrium when the body is exposed to a furnace temperature, or is surrounded with the icebergs of the Arctic regions. In both instances, a thermometer placed under the tongue indicates that, uninfluenced by external circumstances, it maintains its own standard. In the first instance, the nervous energy will be directed to moderate the excessive external heat by calling to its aid the functions of perspiration and vaporization. In the second, by generating in its own laboratory sufficient to supply that of which it is continually robbed. In both instances it will resist for a time the attacks made upon it from without by concentrating its powers within the citadel. But there is a limit to these operations, there is a period beyond which it cannot proceed; exhaustion will be threatened, and chemical agency will gain the ascendancy over the vital powers. Liebig, the zoochemical professor, reduces the formation of animal heat to chemical causes purely, and maintains that there does not exist in the body any other unknown source of heat besides the mutual chemical action between the elements of the food and the oxygen of the air. Still, the same author confesses that no one will seriously deny the share which the nervous apparatus has in the respiratory process, for no change of condition can occur in the body without the nerves. They are essential to all vital motions; under their influence the viscera produce those compounds which, while they protect the organism from the action of the oxygen of the atmosphere, give rise to animal heat; and when the nerves cease to perform their functions the process must assume another form.

In the commencement of this disease there is great nervous excitement, and great elevation of temperature, which latter declines in a ratio with the diminution of the former, whether this be effected by remedial agents, or occur in the natural course of the malady. We find, consequently, that in those very malignant cases where the nervous energy is prostrated by the intense action of the poison, it falls immediately below the natural standard. We have to distinguish between natural and morbid heat, between a power

exercised to resist extremes, and one annihilated by its own morbid action. In the one case, the external heat, however excessive, does not penetrate beyond the surface, for the increased perspiration carries off the excess. An artificial heat, as great as the animal temperature of scarlatina, is never applied to the brain as long as this maintains its energy. In the second instance, matters are on a different footing, both as regards the quantity and quality of the heat. Instead of being employed in resisting the influence of artificial heat, the nervous system is occupied with the generation of morbid heat, for it is a morbid production in the elaboration of which the function of perspiration is neglected; so that we have the whole of the caloric operating upon the nervous system.

The brain is primarily and secondarily affected; and, little as we are as yet acquainted with the real essence of heat, yet there is ample proof that such as is the result of fermentation, as we find in the exanthemata, has a different operation from that which is the result of artificial contrivance. The quality, as well as the quantity, must be taken into the account; just as we find a difference in the operation of natural thermal springs and the water of the heated cauldron, so great a difference may there be in the heat generated within the body and that which is applied to it from without. The delirium which is often the result of this increase of temperature has been differently viewed as to its consequences. Heberden expresses himself thus: "Never is there less danger than where so much is anticipated." He alludes to the early appearance of this symptom in scarlatina, which, in most other fevers, manifests itself late, and is a harbinger of ill. We even find that where constant delirium has prevailed, it often leaves no physical trace of its having existed. Dr. Bright alludes to the case of a child, seven years of age, who died of scarlatina after having been in an unceasing state of delirium for the greater part of three nights and two days. The only appearances afforded in the brain were a little more vascularity than natural, and decidedly less serum, both under the arachnoid and in the ventricles, than is usually observed.

Of the purple form.—Dr. Currie has stated that there is a species of scarlatina to which the name of purpurata ought rather to be given, for the efflorescence is of a purple, not of a scarlet hue, in which, although the throat be deeply and extensively ulcerated, the pain and difficulty of swallowing are comparatively small, for the passage is kept open, and the sensibility of the parts destroyed by the progress of gangrene.

In such cases extreme feebleness and rapidity of the pulse, and great fetor of the breath, appear even in the commencement of the disease. The heat does not rise much above the standard of health; great debility, oppression, head-ache, pain in the back, vomiting, and sometimes purging, accompany its rapid progress; the patient sinks into a low delirium, and expires on the second, third, or fourth day.

It outstrips in rapidity, and it equals in fatality, the purple confluent small-pox. Happily it occurs rarely; I have not seen it more

than five or six times in upwards of twenty years of practice."

An important circumstance is added in a note;—

"Three persons in one family were attacked. One child had it in a mild form, another severely, with whom the father slept. He was in his office of business on Friday, and was dead on Monday evening."

Of the disease thus detailed by Dr. Currie, I have met but with one instance in which the whole of this history was carried out.

Seat of the disease.—The three structures which are particularly implicated in the history of scarlatina are the mucous, the cellular, and the serous; and this for the most part is the order of succession. As regards the two last, they may be considered identical, but it will be convenient to make this division, reserving the term serous for the enveloping reflected membranes. The viscera for the most part escape the ravages of the poison, at least as far as their solid texture is concerned; they may suffer from the morbid contiguity of their envelopes.

As the epidermis is precisely of the same nature as the epithelium, these must be considered identical in the pathological sense which Bichât took of them.

The first fury of the disease is spent upon this secreted membrane of the mucous structure. Then the cellular substance, and often simultaneously with this the reflected membrane, are implicated. It will much simplify our knowledge of the march of the poison if we take a general view of these membranes. We shall better appreciate the apparently complex and manifold lesions and disorganizations, which are the consequences of this malady, by reducing them to affections of continuity of structure.

Mucous membranes.—The extent of the mucous surface is very considerable, for it lines the whole of the alimentary canal and the urinary organs, and, in the female, is distributed to the uterus and fallopian tubes. Bichât, for the sake of simplicity of arrangement, divides it into two portions. The one, entering the mouth, the nose, and the anterior surface of the eye, lines the two first cavities, and is continued from the first into the excretory ducts of the parotid and submaxillary glands, from the second into the sinuses entering the puncta lachrymalia, the lachrymal sac, and nasal duct. It is continued into the pharynx, and furnishes a portion to the Eustachian tube, from whence it passes into the internal ear. It lines the whole of the alimentary canal, and sends off in the duodenum two portions, one to the ductus communis choledochus, cystic, and hepatic ducts, and gall bladder; the other to the pancreatic ducts. The whole of the respiratory organs and tubes are lined by one division of the same membrane. The second portion, entering by the urethra, is distributed over the inner surface of the bladder, the ureters, and the pelvis of the kidney, the prostate, the seminal apparatus in the male; the vagina, the uterus, and the fallopian tubes in the female, where it terminates in the peritoneal sac, affording the only instance in the animal economy of communication between the serous and mucous surfaces.

However artificial this view of the structure and extent of the mucous membrane may appear, it facilitates the study of its morbid state in the disease in question.

From this it is evident that the extent and ramifications of the mucous membranes are very considerable, and offer an immense surface upon which the poison may exert its ravages.

The conjunctiva is the seat of suppurative inflammation, and although disorganization of this membrane may but seldom occur, still Dr. Gregory mentions the case of a gentleman who lost the sight of both eyes from the intensity of the inflammation.

The meibomian glands are frequently irritated, the puncta lachrymalia and the ductus ad nasum closed, by thickening of this lining membrane, so that the tears flow over the cheeks, and the face is often disfigured by eversion of the eyelids for the rest of life. The Eustachian tube is the seat of the same morbid action. It is often closed by the thickening of the membrane, and temporary deafness is caused till this returns to its normal state. In severer cases the poisonous matter penetrates into the tympanum, ulcerates the membrane, and the bones of the ear are discharged externally. Suppuration is frequently set up, and fœtid discharges from the nose and ear make the patient miserable to himself and to those around him. In some of these very severe states the disease assumes the appearance of glanders, and it may be a subject for future experimentalists to ascertain, whether such discharges of the human subject introduced into the nostrils of the horse would not produce a disease similar to that affection. All the bony cavities lined by the mucous membrane are subject to exfoliation; for as soon as bone is denuded of its investing covering it dies and separates. Portions of the turbinated bones are sometimes discharged.

There is in milder cases an annoying source of irritation, arising from the separation of the epithelium; which forms bands hanging down in the fauces, keeping up a constant state of irritation, and exciting efforts to vomit.

Some instances are recorded where the whole lining of the œsophagus has been rejected similar to the croupy membrane from the trachea, in cylindrical tubes; constituting the diphtherite of Bretonneau.

The vomiting, which so frequently accompanies the disease at its commencement, is probably sympathetic with the condition of the fauces; but in progress of time the inner coat of the stomach is implicated, and nausea occurs to a distressing degree. This frequently continues to harass the patient at advanced periods of the disease; an erythematic inflammation causing vomiting, when confined to the stomach, produces diarrhœa by extension into the intestines. This may produce ulceration, and cause dysentery and all its consequences.

Much of this may be due to the quantity of morbid secretion swallowed, but independent of this secondary, there is often primary irritation. The respiratory passages offer appearances similar to those of the alimentary. To begin with the epiglottis. It is found

in all states of congestion, and is often ulcerated. It has been much agitated whether croup is a consequence of this disease; it is certainly of rare occurrence: a stridulous sound does not constitute croup.

Although diphtherite is recognized as a variety only of scarlatina by many British practitioners, for the membrane has been fully formed in this disease, still Bretonneau insists upon a specific distinction. He advances the following parallel between the two affections.

Diphtherite and scarlatina.—The commencement of diphtherite is hardly accompanied by any febrile affection, or the attack is quite ephemeral, and the pulse soon sinks to its natural standard. The organic and vital functions are often so little deranged, that children who are menaced with very severe attacks of the disease do not lose their appetite, nor are they prevented from pursuing their usual games.

The scarlatina is ushered in by commotion in the circulating system, similar to that produced by the bite of a venomous reptile, and the respiratory movements are equally affected. The digestive functions are for the most part deranged, and vomiting and diarrhœa, together with great nervous depression, which increasing, rapidly announce a fatal termination. The diphtherite is not marked by any definite periods in its progress, as is the case with scarlatina. The diphtherite, if it does not cause death by its mechanical obstruction, degenerates into a chronic affection, whereas the progress of the other is very rapid towards a fatal termination at all periods of its duration. The former proceeds from a single point, and spreads with more or less rapidity over the surfaces, which it attacks gradually, and it manifests a peculiar tendency to attack the respiratory passages.

The scarlatinal inflammation diffuses itself at once over all the mucous surfaces, and has no tendency to attack the uniform tubes. In the former case, if death occur within the first periods, it is from mechanical obstruction to respiration; in the latter, no organic lesion justifies the cause of death. If topical applications modify the diphtheritic inflammation, the health is restored as soon as the local complaint is terminated. This is far from being the result in the scarlatinal inflammation, which when relieved from all its local characters as affects the throat is followed by a host of untoward symptoms, some of which we have before enumerated."

Medical Gazette, May 2, 1845, p. 7.

[Serous membranes are supplied by a set of vessels distinct from those of the organs they enclose. This is an important pathological fact, because the affection of a viscus is not a necessary consequence of that of its investing membrane, and *vice versâ*. It serves also as a grand distinctive feature between serous and mucous membranes.]

Arachnoid.—In our pathological investigations of the serous membranes, there are none which deserve more attention, from the

influence which this poison exerts upon them, than that exquisitely delicate membrane, the arachnoid.

Its use is of the greatest importance in modifying the pressure of the dura mater; it serves as a kind of water-bed between this and the brain.

It has been here, as in other cases, that morbid action has most contributed to develop the anatomical structure of parts. No injections have been able to penetrate this membrane, and it has been from function alone that we have drawn our inferences.

The disease of scarlatina has served as fully as most to develop its vascular structure; for in dissections of the brain, not only has serum been found effused into its cavity, but the vessels themselves have been seen injected with blood.

"When the tertiary action of the poison, (as stated by Dr. Williams), falls upon the membranes of the brain, the arachnoid is found injected, and serum effused into its cavity, and pus and lymph deposited in the sub-arachnoid tissue;" and other pathologists have stated that appearances of blood have been seen extravasated under the arachnoid.

There is a cellular tissue, which fills up these spaces, where the arachnoid skips from one prominence of the pia mater to another without dipping down into the anfractuosities; and this is especially the seat of infiltration from this disease, and more so than the shut sac.

Although the ventricles are not lined by the arachnoid, they are not the less furnished with a serous membrane, which performs the same office, and hence effusion takes place into their cavities as a sequela of this disease. This may be in some instances so sudden as to cause almost instant death, as in those cases of the water-stroke, one of the mechanical causes of dissolution; or, it may be by slow but constant action, giving rise to a most common result of the tertiary action of the poison—hydrocephalus internus.

This will naturally vary according to the intensity of the dose of poison, and the excitement which it has occasioned.

The next affection of serous membranes which is in the rank of importance is the pleura.

The effusions into the chest as into the ventricles, or into the arachnoid, may be sudden, as in the case before stated, or by slow degrees, constituting a chronic form of hydrothorax.

These effusions are not to be considered as, generally speaking, the result of the debility subsequent on the eruption, but as a tertiary action of the specific poison; they occur in the mildest forms of the disease, where no depletion has been practised, and analogy affords proofs of such consequences arising from specific poisonous action.

The virus of reptiles, when taken into the stomach, does not produce the primary effects of the exanthemata, yet dropsical effusions are the secondary consequences, as we are informed by the following anecdote, related by Dr. Stevens:—Mr. Wallace, of Virginia, took the whole of the poison from the fangs of a large and vigorous

rattlesnake. This he made into pills—bags, venom, and all. He swallowed these, sometimes at the rate of four a day. They produced most heavenly sensations, and melancholy was quickly changed into gay anticipations; but unfortunately these delightful feelings were followed by a general dropsy, which continued for a considerable period.

[The pericardium, when the dropsy is general, indicates by inflammation and effusion of lymph its participation in the affection.

The synovial capsules, the true character of which was demonstrated by Bichât, as belonging to the class of reflected membranes, not unfrequently suffer also.]

Affections of the joints are painful sequelæ of scarlatina. In some cases effusion of serum causes dropsy and enlargement of the joint. In severer cases pus and lymph are effused into the cavity, or the membranes may run into adhesive inflammation, and cause anchylosis. False membranes may be formed, and even that substance which goes by the name of loose cartilage. The synovial adhere every where to the fibrous membranes, and hence arise two sets of affections, rheumatic and arthritic inflammation. The first is confined to the fibrous textures, the aponeuroses of muscles and the fibrous capsules; these do not suppurate, and the swelling which may take place is from infiltration into the cellular membrane every where present.

The pain is often excruciating in these parts, so as to lead to the belief of arthritic inflammation and suppuration into the cavities, but it is not the synovial membrane which often is affected in these instances. It will frequently happen that the knee or the ankle will suddenly become red and swollen, and cause excruciating pain, when on a sudden a metastasis will take place to the elbow, at once designating the true nature of the disease.

When the synovial membrane is affected, the pain is more constant and durable. In the latter instance, a free application of leeches often arrests the progress; in the former they only irritate, and opium here is the sheet anchor.

Anasarca.—The cellular membrane is the connecting medium of the whole system. It is everywhere present and pervades all structures. If its ubiquity were to be proved by diseased function this would be accomplished by scarlatina. It is found infiltrated in that small portion which lies in the hollows of the arachnoid, and wherever there is a particle to be found it is demonstrable by infiltration.

It is subject to different degrees of inflammation in the progress of this disease. The most common affection is œdema, an affection different from that anasarcous state which is the result of debility and enlargement of viscera. It does not commence, as in these cases, in the most dependent situations, uninfluenced by the laws of gravity, but it frequently commences in the head and face, and soon spreads all over the body. It is attended with considerable pain, and is the result of inflammation of the cellular tissue. A more

decided state of inflammation is when the cellular membrane takes on the adhesive form, and involves the neighbouring parts, causing a sense of hardness and induration, often in the muscles of the neck, so as to produce exquisite pain in all attempts at motion. This gives rise to a species of wry neck from the twisting of the muscles, which is found to prevail in severe epidemics: copious effusion of coagulable lymph unites the parts into one morbid mass. It may proceed to slow and partial suppuration, and is one of the most aggravating causes which protract convalescence. When these tumours break spontaneously, or are opened by the lancet, a sanious scrofulous discharge is kept up for weeks; at other times ulcerative inflammation is produced, which may extend the whole length of the neck from the angle of the jaw to the clavicle. I am acquainted with a lady whose neck is scarred in this way, as if she had been burned. These local affections are generally accompanied with constitutional fever; sometimes the inflammation is so vehement that gangrene immediately ensues, and so extensively as to terminate at once the patient's existence.

Affections of glands.—The salivary glands are subject to irritation, induration, and suppuration, during the progress of this specific action. Salivation is by no means an uncommon occurrence during convalescence. A more distressing circumstance is the gradual swelling of the parotid and submaxillary, which sometimes only takes place at a very late period of the disease, and passing into inflammation, may, by setting up new action, exhaust the patient, when all fears had been dismissed of his recovery. It is a circumstance which demands the greatest attention from the very first moment of its appearance. The whole chain of cervical glands is subject to enlargement. The mesenteric glands do not escape, and lay the foundation of marasmus, particularly in strumous habits. Buboes have been formed in the groin. The common parlance, which was so commonly heard at the time of the invasion of the cholera, is equally applicable to scarlatina. If it be not immediately fatal, it develops latent diseases which are so.

Kidney.—It was Haller's opinion, that no specific structure was necessary for a particular secretion, which might under certain circumstances be produced by any apparatus. This admits, however, of some modification, for these vicarious secretions are never complete: still, one may supply the place of another, so that fatal consequences may be prevented from its suspension.

If the urine be scanty the perspiration is more abundant, and has a strong urinous colour, for between the skin and kidney there seems to be a mutual understanding. In the progress of this disease the serum is sometimes poured so rapidly into the cellular membrane, and in such quantity, that the office of the kidneys becomes a sinecure. This suspension of secretion is in most cases only functional, and is restored as the action of the exhalants becomes diminished in the progress of convalescence.

But another question remains for consideration, not as regards the quantity, but the quality of the secretion. In many cases of

this malady albuminous urine is secreted. Is this peculiar quality of this fluid a certain indication of disintegration of the organs? From evidence which I can collect upon the subject the quality is functional in many cases: for patients perfectly recover, which they would not do, were the kidney itself diseased. It is probable that some disease has existed previous to the scarlatina in those cases where a granulated structure has been found on dissection. There would hardly have been time for such disintegration as has been found in some cases.

[Derangements of the urinary secretions are much too commonly attributed now to the existence of Bright's disease: the surgeon appearing to forget that although when this is present, there will be albuminous urine, yet that such state alone is by no means proof of the existence of that disease.]

In severe cases of scarlatina, the lining mucous membrane may be eroded and ulcerated. Bloody urine is sometimes passed in this disease.

The very sudden manner in which some fall victims to scarlatina can be attributed only to the intensity of the poison. The system is poisoned as rapidly as by the inoculation of the upas, or by asphyxia from carbonic acid. It is difficult to ascertain the shortest period at which death has ensued after exposure to the contagion, but certainly within the space of eighteen hours; so that we may say of this disease what a celebrated French physiologist said of the cholera,—it commences with death. "In such instances, there is no febrile reaction, and the patient sinks, indifferent to all surrounding circumstances, and like to one labouring under an overwhelming dose of poison."

In such instances no devastation is visible in the mucous surfaces, nor do any appearances of the brain, or any structural lesions, account sufficiently for the sudden exhaustion of life. "The danger of this disease," says M. Bretonneau, "is not in any proportion to the inflammation of the throat. I have known it fatal in eighteen hours from its invasion without any very distinct redness or swelling of the tonsils. Even in such cases as where the affection of the throat was the most intense, I have been convinced that it had but little influence upon the result of the complaint. Pathological anatomy has left no room for doubt that those inflammatory lesions which do not extend beyond the pharynx are never the causes of death. It is to a miasmatic poison, which leaves no traces of its nature, that death is attributable. It is to this poisoning that the frequent and difficult respiration is due, together with that quick and irregular pulse, marking the extreme disorder in the circulation which prevents it being counted for a quarter of a minute together."

The most fatal cases which I treated of this disease were in houses situated on the banks of the Neva, in a low swampy district, where typhus, remittent and intermittent fevers, were endemic. My colleague, Dr. M'Nab, lost three of his children in four days, and the fourth only survived to drag on a miserable existence for a few

months longer. In these cases it is probable that a ternary compound is formed between the palludal and animal poisons.

Effusion into ventricles.—The next most sudden cause of death, and which frequently occurs unexpectedly, is the result of effusion into the cavities, and, for the most part, into the ventricles of the brain. It will sometimes occur that a child will pass through the first stages of the disease with little apparent injury, and then at the period of supposed convalesence suddenly die.

This is the wasser schlag, so well described by Dr. Golis, of Vienna. It is a sudden effusion of fluid within the brain, either occurring idiopathically, or the consequence of the repelled matter of a previous disease, or of obstructed evacuation from an excreting organ, from which death occurs in a few hours. To this belong all those depositions on the brain which arise from small-pox, measles, erysipelas, and other febrile eruptions, &c.

In all these cases of sudden death there is found, on examining the bodies, an effusion of fluid in the head—for the most part in the ventricles of the brain itself. Of the rapidity of this Dr. Golis states:—"An infant, eighteen months old, was placed in bed playful and laughing; about ten at night its mother left it sleeping tranquilly, but the next morning it was found dead. The same happened to a healthy infant six months old, which went to sleep at the breast of its nurse, but the next morning was found dead by her side. This was a suspicious case of overlaying, but it was proved to have been the effects of disease, as two ounces of serum were found in the brain.

Medical Gazette, May 9, 1845, p. 43.

[Death may be caused mechanically by infiltrations into the cellular membranes, as of the glottis. This œdema causes the croupy sound occasionally met with in scarlatina, and which the emetics, &c., given to dislodge the secretions on which its existence is supposed to depend, fail to remove.]

The principal seat is the chordæ vocales, and the epiglottis, and the tumefaction is produced by the accumulation of serum, or exudation of lymph from beneath the mucous membrane.

[Tracheotomy is the only resource at all to be depended on in these cases. That the practice is justifiable we consider fully proved by Dr. Wilson's cases, published in the Medico-Chirurgical Transactions (vol. xxvii. p. 134), of some patients suffering under the Walcheren fever, in whom the cellular tissue surrounding the glottis was enormously distended.

It is usually supposed that after an attack of scarlatina, the system becomes fortified against its recurrence. Dr. Billing, however, says he has "known it occur three times in the same individual, frequently twice; in one instance, in its exquisitely marked form, as to inflamed tonsils, appearance of tongue, eruption and desquamation of skin, twice within ten months."

Such cases we have met with, indeed they will occasionally present themselves to every medical man in the course of practice.

As to the means of diffusion of the malady, scarcely anything is certainly known. It is probable that the atmosphere is the chief agent, though we think it can have little or no effect upon the increase or diminution of the force of the virus.]

It is probable that we look too high for the explanation of what lies under our feet. The causes of evil are often furnished from malarious poisons, from choked sewers, bad drainage, stagnant water; so that what we attribute to atmospheric is perhaps due to telluric influence.

We lose sight of the poison itself in these speculations. Why are we to suppose that it is always the same in quantity, knowing as we do, with respect to small-pox, that by artificial dilution the virus is modified in its effect?

Two causes are assigned for the apparent malignancy of epidemics at their commencement. The first is attributable to the intensity of the poison, which, as it becomes more diffused, gets diluted, and is finally exhausted. We cannot otherwise account for the cessation of these epidemics, for no change of atmosphere that we can test will help us out of the dilemma.

Medical Gazette, May 16, 1845, *p.* 93.

The chemical laboratory affords us evidence, as we shall instance hereafter, that mechanical mixture and chemical combination are very different processes.

We may apply this law to animal poisons, and suppose that some may be inert when in a state of mechanical diffusion, but become virulent when forming a chemical combination.

A domestic nuisance may illustrate our meaning. Some boast that certain insects do not bite them, whilst with others they produce a state of fever. As regards the first position, it is an error—the insect feeds equally upon all, as is easily proved; but the venomous fluid which he instils into the wound for the purpose of diluting the blood, so as to enable him to draw it up through his syphon, does not in both cases meet with matter in such proportions as to form a compound which acts as a poison.

It is the difference in the two cases of mechanical mixture and chemical combination.

The stings of bees, wasps, and musquitoes, produce very different effects in different persons. There is no law of immunity—the same cause shall produce various results at different times in the same individual; and then we say, that the blood is in fault; but this was not felt or known before. It required this circumstance, the bite of a musquito, to prove the fact of its bad condition.

Now the silence of the ancients upon the subject compels us to believe that scarlatina was not known to them. We attribute its existence to the influence of a specific poison – how generated we are ignorant; but, when once created, capable of regenerating its species.

If the poison be specific, so is the disease. It is itself alone, and can be produced but by one cause. Many diseases may simulate it, but there is but one source of scarlatina.

The question may be here agitated of the conversion of diseases into others—an idea very generally prevalent when the plague used to scourge the European world more than it does at present.

In fairly investigating this subject, we shall find that however types, nay, structures, may change, the species will remain distinct, difficult as it may be at all times to rake it out of the mass which smothers it.

Thus the types of fevers, arising from one and the same cause, are very different, and may be changed during the progress towards convalescence. An aguish paroxysm often terminates a synochus.

Anatomical investigation presents us with the positive evidence of change of structure. The mucous and serous membranes are convertible into each other, so that their morbid conditions must offer a new series of action; for suppurative and adhesive processes are not the same; and we may at least come to this conclusion, without launching too far into the field of hypothesis, that the animal system, owing to causes which are not at present within our reach, receives such different impressions from the invasion of the same poison, that, judging by effects merely, we should scarcely be able to recognize the same operating cause.

Let us adduce one of the most striking instances in illustration.

Who would recognize at first sight in the same affection, which we denominate croup, the awful garotillo of the Spaniards, the morbus suffocatorius of the Italians, the angina gangrenosa of the French, and that awful malady, which raged some time ago in the middle of France, and in which this croupal formation invaded mouth, lips, nose, eyes, the nipple and vulva of women, and the penis of the male? Who would have expected the identity of all these diseases, till Bretonneau proved it in his treatise on the diphtherite; who observes, that the specific character of diseases is proved by such a mass of evidence, that it would be difficult to find a better established fact. It has been recognized in all ages, and it is chiefly upon this knowledge that the diagnosis of most diseases has been formed. Without accuracy in this respect, the results of a great many cannot be predicted—without it, the choice of remedies must be undecided, and far from counting upon their success, we could not be responsible for their neutrality.

Ibid, *May* 30, 1845, *p.* 181.

[*On the origin of scarlatina.*—We know nothing of the poison of scarlatina, small-pox, &c., but from their effects. How can we explain that the venom of a rabid animal should lie dormant for months, and then break forth with the utmost virulence, unless we suppose it to have been waiting for some elective element with which to combine chemically? Until this combination takes place the virus is intangible and powerless. Sir G. Lefevre does not believe that it continues in the circulation; but supposing that it does,

he brings forward the immiscibility of oil and water to explain how it might thus be *mechanically* mixed, whilst its effects are not manifested until it is *chemically* combined with the blood.

As oxygen and nitrogen combined in different proportions form either a bland mixture, an intoxicating potion, or a deadly poison, so we may allow of two morbid poisons forming a ternary compound with an animal structure. Such compound of a paludal and an animal miasm with mucous membrane will act with much more violence than either separately.

Neither muriatic nor nitric acid by itself will act upon gold; combine them, and they immediately dissolve it.

The disease resulting from a mixture of the venereal and mercurial poisons is far less manageable than either one or other of the two.

Dr. Christison has remarked in a case of poisoning by opium and belladonna, that the former prevented the delirium usually caused by the latter, whilst the belladonna prevented the usual action of opium on the pupils, and actually produced an opposite action.]

Diseased action may assume a thousand shapes, and be of daily creation; but a disease of a specific nature, true to itself, engendering its like, can only have arisen from some peculiar arrangement of particles, which may have acquired ages for their juxtaposition, or which accident might have called forth thousands of years ago.

[It may not be too much to suppose, that certain contagious diseases may, by a progressive change in the human economy, become much modified in their severity or disappear, whilst others, previously innocuous, may become virulent in the extreme.

That various modifications are produced on the human organization by food, climate, education, &c., we have proof positive. The secretion of a black pigment by the rete mucosum in the African, and not in the European, is an example of this.

Glanders, a contagious disease in the horse, has only lately been recognised as communicable to man. If this disease had always been contagious, how could such a fact have been overlooked. Must we not rather suppose that the human constitution has become so changed as to be capable of being poisoned by a virus which till lately was innocuous.

On the other hand, lepra, formerly an almost universal disease, has now totally disappeared. Such facts as these seem enough to prove the modification in the intensity of different diseases, produced by a change in the organization.

Ibid, June 6, 1845, *p.* 224.

If we adopt Liebig's views in his theory of disease, we shall feel intimidated from entertaining any hopes of producing a cure by direct action upon the solids or fluids of the body, for we cannot thus undo what has been already effected. "For disease is the result of such disturbance in the system as the vital forces are not able to resist, or are weaker than the disturbing cause."

Complete cure is not effected till the external action and resistance are brought into equilibrium. Hence it must follow, that a diseased condition once established, cannot be made to disappear by the chemical action of a remedy. There can be no antidote to an animal poison, which, passing from a latent state, and forming a definite compound with the animal substance, produces its specific action in the system. We are not in the same position with the animal economy as when we apply an antidote to a mineral poison, for here we counteract the effects of the noxious matter before disease is set up; whereas in the other case it is this very presence of the disease itself which first leads us to a knowledge of the cause.

Now, arguing *à priori*, we might reason otherwise. We know that every globule of blood contains its atom of iron, and experience teaches us that in thirty and less seconds we can form chemical compounds with this iron throughout the whole mass of blood. As a grain of sand is to the sea shore, so is this globule to the whole mass; and yet we can form a chemical compound with it, which can change all its relations of action upon the system, and not one chemical compound, but many; we can form definite proportions with the salts of iron formed in this globule.

If then, art is able to effect this, why should not we be able to throw into the system such antidotes as would act upon the morbid poisons in the globule as other matters do upon the iron; or throw such matters as will counteract its effects should it present itself? for it is from the preventive system alone that we can hope for assistance; and the following fact offers us some encouragement.

Liebig informs us that colica pictonum is unknown in all the white-lead manufactories where the workmen are in the habit of drinking weak sulphuric acid lemonade.

The disease of colica pictonum cannot be so cured if once formed.

Might it not be possible to prevent the effects of mercury upon the system by some similar antidote?

Such a proceeding seems both plausible and rational, but in our present condition of knowledge two circumstances oppose themselves. In the first place, we lack the antidote; in the second, when we should have the power of making use of it, it would be already too late. The disease set up in the system is not to be cured by any remedy which can counteract its future effects.

It may perhaps be admitted, that limits may be put to the ravages, and that the progress may be accelerated or retarded by such measures as we might propose, but this would not at once restore the normal condition of the system.

"The art of the physician," says Liebig, "consists in the knowledge of the means which enable him to exercise an influence on the duration of disease, and in the removal of all disturbing causes, the action of which strengthens or increases that of the actual cause of disease."

We can hope for nothing, therefore, from chemical agency, when generally diseased action is set up, and all that we can attempt is, to find means of guaranteeing the healthy from the influence of the

diseased, by putting some impediment in the march route of the morbid poison, so that it shall impinge harmless upon healthy structure. If it be allowed to form its compound, it will then be too late; and here we are, and must remain, in a labyrinth of doubt and uncertainty as to the time of effectual action, for we cannot judge of causes but by effects, and poisons may or may not be dormant in the system, and thus reduce our operations to matter of conjecture.

As it is not in our power to arrest the progress of the disease when fully formed, we must direct our attention to such means as will render the matter innocuous, or make the healthy proof against its influence. This will be comprised in the employment of chemical disinfectants, and mechanical contrivances for purification.

It has been proved that scarlatina is not less severe when the patient has been inoculated. I shall submit to your notice two chemical experiments from the mineral and organic kingdoms, to prove how a very minute particle of matter, and apparently indifferent in its action, is nevertheless sufficient to prevent the chemical reactions of large masses of other substances to which they are united.

The sesqui-chloruret of chrome, chemically pure and sublimated, is completely insoluble in water, either cold or boiling. It is equally insoluble in all acid solutions. It is not attacked by concentrated and boiling sulphuric, nitric, or nitro-muriatic acid. All of these are alike without effect on this combination, one of the most stable in the mineral kingdom.

It is formed by $Cr_2\ Cl_3$. The proto-chloruret of chrome differs from the sesqui-chloruret by the abstraction of an atom of chlorine. It is represented by $Cr_2\ Cl_2$.

This second salt is highly soluble, and absorbs with the greatest avidity the oxygen contained in the air and in water to form a new product, $Cr\ Cl_2 + O$.

The following fact is perhaps without parallel in mineral chemistry:—A quantity, however infinitesimal, of the proto-chloruret of chrome, mixed with one million times its weight of the sesqui-chloruret, transforms this salt from an insoluble into a salt soluble in every proportion, if the proto-chloruret is pure, but if it has absorbed any portion of oxygen it becomes inert, and no longer alters the sensibility of the sesqui-chloruret.

Here, then, is an example of a substance as nearly allied as possible in its chemical composition to a second substance, completely preventing one of the most important chemical properties of that substance, even though mixed with it only in infinitesimal proportions; and this preventing action is itself neutralized by the introduction of the poison (for the proto-chloruret is here in reality the poison of the sesqui-chloruret) of an infinitesimal quantity of oxygen. This modification is evidently allied to divers modifications frequently observed in organic chemistry, viz. the dissolving action of disastase on starch, &c. &c.

Why should not the transformation of blood from a coagulable into an incoagulable liquid, a transformation effected by many poisons, be explained or rather conceived after a similar fashion?

Is it more difficult to conceive that ten pounds of blood should lose its essential property, coagulability, under the action of one grain of poison, than that ten pounds of a salt should lose its characteristic property, insolubility, under the influence of one grain of another salt as nearly allied to the first as healthy blood is to any animal virus or morbid poison?

The following, and I believe very recent experiment in organic chemistry, proves in a most striking manner the properties which some bodies possess, even in the most infinitesimal doses, of counteracting chemical action.

If one ounce of iodic acid, half an ounce of oxalic acid, and two ounces of water, be mixed together in a glass bottle, exposed to a moderate heat, 25 cent. (77° F.) and to the light of the sun, a process of combustion immediately commences. The oxalic acid is burnt, hydriodic acid is formed, carbonic acid is evolved, and after a short space of time, the whole of the oxalic acid is destroyed. The same results, but to a less degree, are produced, when tartaric, lactic, and formic acids are used.

If in any one of these acid solutions a drop of hydrocyanic acid is let fall, the whole process of combustion is arrested.

The two acids exert no influence on each other, and the mixture may be exposed for days and weeks to the action of the sun, and a temperature of 60°, 80°, 100° C. (212° F.) without the slightest reaction taking place, or a particle of carbonic acid being evolved.

Now, the chemical process of life is a real combustion, a combustion carried on not only in the lungs, but in every organ and tissue where the process of nutrition is going on. It is a combustion to a great extent of lactic acid, evolving vapour and carbonic acid, which are carried off by the venous blood, and poured out by the lungs.—The chemical process of life may be compared to this reaction of iodic acid on the vegetable acids, which, like the phenomena of nutrition, is accelerated by light and heat. Is it so singular that a drop of hydrocyanic acid should arrest instantaneously a combustion of a similar nature carried on in a glass bottle?

The elucidation of such facts will serve hereafter to render the action of poisons upon the animal economy more comprehensible. They will not appear so completely foreign to all other chemical ideas.

The prosecution of these inquiries may hereafter lead to more important results. If chemistry cannot at present assist us in modifying the disease, when it is once formed, it may enable us to destroy the poison in its uncombined state with animal matter, and so prevent its propagation, or if not wholly so, may weaken it in some degree, so that in process of time a milder disease shall be generated —a fever which shall operate upon one part of the blood, and not throw the whole mass into fermentation, as regards the small-pox and the cow-pox. We must turn our attention, then, to consider the means of attacking this poison in its uncombined forms.

I shall speak of two methods which have been employed with success in disinfecting clothes which were imbued with the virus of

the plague; I allude to the experiments of the late Dr. Bulard, who fell a sacrifice to his zeal in investigating the nature of this disease in Turkey, and who was employed by the Russian government in regulating the quarantine laws at Odessa.

His researches on the plague led him to the belief, that this malady never breaks out sporadically, nor bears an epidemic character; and amidst its greatest ravages, he asserts that no European habitation was ever known to be attacked, if isolated from those where the disease was raging—hence, isolation becomes a means of preventing the progress of the contagion.

All the supposed disinfecting agents, as chlorine, or the fumes of sulphuric, acetic, muriatic, or nitric acids, all the fumigations with myrrh and frankincense, and aromatic plants, are perfectly useless, and if any effect can ever have been produced by them, it is merely from the heat employed to disengage their volatile matter. It is by two processes only, exposure to high temperature, and immersion in cold water, that disinfection can be accomplished.

The extinction of the plague is entirely due to thermal changes, and depends upon a continuation of hot and cold weather for some days successively. This has been observed of several plagues which visited Europe, and more particularly the one at Moscow, where the setting in of the frost arrested its ravages.

Extremes of heat, according to the author's observations, have the same effect. At Cairo, Smyrna, and Constantinople, it was found that the disease diminished rapidly, and soon extinguished itself, when the temperature rose to 80 or 90, and continued at that elevation from six to eight days.

If these states are produced artificially, the problem of disinfection will be solved, and it only remains to establish a high or low temperature; but the former being much more easily accomplished than the latter, it is more frequently resorted to.

As regards the process of disinfecting clothes, and various substances, the temperature to which they are exposed must vary from 110 to 160, according to their susceptibility of impression. The length of time will be in an inverse ratio with the elevation of temperature, the surface exposed, and the conducting power of the materials. Cotton, which is one of the most susceptible substances, when exposed for twelve hours to 110°-140°, will be sufficiently purified. The same temperature disinfects houses.

M. Arago quotes the authority of Dr. Henry upon the efficacy of heat in controling contagious influence. A temperature of 180° F. produces no change either in cotton or stuffs which serve for clothes. A temperature of 212° destroys the contagious property of the vaccine and variolous poisons; and upon analogous reasoning, the same chemist supposes that a high temperature may act in the same way upon other contagious matters. Heat, moreover, from its principle of equable diffusion throughout all bodies, is more certain in its disinfecting qualities, and more quick in performing this than gases, for these, from their gravity and greater or less density, only

penetrate imperfectly the bodies or substances submitted to their action.

Ibid, June 20, 1845, *p.* 312.

[With respect to prophylactic measures, artificial heat in a confined air, and immersion in cold water, are the only rational modes of practice. The latter is considered by the Levantines so certain, that they do not hesitate to wear the clothes of plague patients if they have been subjected to immersion.

The late expedition to the Niger furnishes a melancholy proof of the fact lately adduced by Mr. Key, in his interesting pamphlet on guano streams: that the surface of a bed of mud is decomposed by running water, but that when this is disturbed, as it then was by the paddles, the noxious matter is given out in fatal quantities.

As scarlatina is certainly aggravated by the vicinity of choked drains and sewers, all such running near a house in which it appears should be thoroughly cleansed and disinfected.

Chlorine is recommended by Dr. Marshall Hall, and Sir G. Lefevre has seen it extensively used in Russia, both in the form of vapour, sprinkled about the room, and used as a wash for the mouth and hands, but without staying the progress of the infection.]

If chlorine be ineffectual, it does not follow that no means remain of which we can avail ourselves. Two points demand our attention, —the possibility of counteracting the progress of the poison, when absorbed into the constitution, and the prevention of communication to others.

Hitherto we have failed in the first: we have not presented matter in such a form to the contagious fluid, as shall form an inert chemical combination. Nor would that avail, if the disease were once formed, and the nervous system implicated. As regards the latter, there is more hope of success; solution will do much, but the propagation by fomites may perhaps be arrested by the same system of immersion as is used in the plague. That the disease is communicated by clothing there are sufficient proofs.

It is, therefore, most imperative, that, when the disease break out in a family, the healthy children should be isolated, and no communication should be allowed between those who are in the sick room and the rest of the family. It would be well for all nurses to be provided with a long dress, which they might quit upon leaving the chamber. The linen of the patient should be soaked in water as soon as removed from the body, and when convalescence takes place, the patient should go through several baths, before communication with those who never had the disease. As regards the rooms, it is of importance to make them red-hot, if possible, and, for this purpose, the doors and windows should be tightly closed, till the room has been subjected a sufficient length of time; then scouring and white-washing are necessary.

All that applies to the plague, applies, I believe, to most contagious diseases, of which this is the most formidable.

It is a subject of constant inquiry, at what length of time it may be considered safe to approach a patient who has been affected with scarlatina?

There is nothing more unsatisfactory than the reply which can be given to such a question. One thing is ascertained, that the disease may be propagated by inoculation. It is a question of visible, tangible matter, that we have to deal with, and, as the epidermis is the chief seat of the disease, it is probable that as long as any of the old cuticle remains, it may retain part of its morbid qualities. Hence washing and scrubbing are of paramount importance in a prophylactic sense.

With respect to clothes, linen, &c., we propose heat or immersion, as in cases of the plague.

There is another question of importance which it is difficult to solve—viz., how long the contagious matter may stick to the walls of a house?

These are questions, which are daily put to us by a public which is becoming daily more inquisitive, and what reply can we make?

I have alluded to a malignant form of scarlet fever, which I met with in Paris, where all the different species presented themselves in the same family.

In this case I could trace the infection to communication with a neighbouring house where the disease had raged two months previously. Unless, therefore, the furniture and walls of a room be not subjected to purifying processes, it is difficult to say how long this poison may lay dormant.

Ibid, June 27, 1845, *p.* 321.

2.—*Carbonate of Ammonia in Scarlatina.*—The value of carbonate of ammonia in scarlet fever has been attested by several observers, and during the past year by Dr. Picken, of Dublin, and Dr. Rieken, of Belgium; while at St. Petersburgh it is said to have been employed by the German physicians without any evident advantage. Mr. H. Freke suggests that it may act by taking the place of urea, and thus supply the natural stimulus to the renal functions; and Messrs. Herdenreich and Heim have observed, that in cases of scarlatina an ammoniacal alkali is deposited on the skin, and hence offer another explanation of its efficacy. Whatever the theory, the amount of practical evidence preponderates in favour of the administration of ammonia in scarlet fever.

Dr. Cowan's Retrosp. Address in Prov. Trans. No. 1, *N. S.*, 1845

3.—MALARIA AS A SOURCE OF FEVER IN WARM CLIMATES.

By J. O. M'William, M.D., Surgeon, R.N., late Senior Medical Officer of the Niger Expedition.

[In Retrospect, Vol. X., Art. 1, will be found a very interesting paper by Dr. Willis on the nature of those fevers which exist in

tropical climates. He doubts the existence of *marsh miasm* and *malaria*, and asserts that all or most of the effects commonly to be attributed to these causes may more truly be attributed to *moist warm air*. The reader, however, must turn to the paper, which is exceedingly ingenious, before he reads the following by Dr. M'William, which is in some measure an answer to it. At any rate, the facts brought forward by Dr. M'William would seem to overturn the theory of Dr. Willis. Dr. M'William does not in the least alter his views on this subject, but still considers that "a morbific agency emanating from the soil is a fertile source of fever in tropical climates." In contradiction of Dr. Willis's views of the action of heat and moisture he states as follows:—]

Heat and moisture are conditions of the atmosphere which readily admit of minute quantitative determination, by methods in common use; and if fever were caused by them alone, in Europeans within the tropics, it should prevail wherever their amount is the same. Now, by reference to the meteorological tables in my work, the temperature and dew point outside the Niger, where no fever occurred, and while in the rivers, were as follows:—

	Temp. 3 P.M.	Dew point, 3 P.M.
Passage from Sierra Leone to Accra	81·13	74 93
Outside Niger from 9th to 12th August	79 00	73·70
In the Nun and ascending to Aboh	80 60	74·00
At Aboh, Iduhu, and the confluence of the Niger and Tchadda to Sept. 21	84·00	73 50
Confluence of Niger and Tchadda to Egga	86·60	72·00

Thus, though the expedition was exposed from 1st of July to the beginning of August, to air containing more moisture, and but little inferior in temperature, at the hottest part of the day, to any experienced within the river, not a case of fever made its appearance until the 4th of September, three weeks after it had entered the river, and had been exposed to the emanations from the ordinarily recognized sources of malaria. Similar results have been observed elsewhere; in Barbadoes, for instance, no fever occurred among the troops in the garrison during August, September, or October, 1841, and although in November a very violent description of yellow fever broke out, the temperature of the air was lower than in August, and the dew point lower than in September; their means were as follows:—

	Temp. 3 P.M.	Dew point, 3 P.M.
August	83·77	70·61
September	82·13	73·78
October	82·31	72 67
November	82 83	71 67

Hence the connexion between "heat and humidity" of the atmosphere and severe remittent, or yellow fever, is by no means so clear as the reviewer would have us suppose. It is, in fact, one of those hasty conclusions which will not stand the test of comparison with observed facts, and could only have been made with a limited view of the history of disease in warm climates.

At Barbadoes, the fever was almost completely confined to one of the regiments composing the garrison, while the other, the men of which were equally exposed to "heat and humidity," and performed the same duties with their neighbours, was almost wholly exempt. The cause of thed isease in this instance, was very obviously the effluvia arising from a pool of water, immediately to windward of a building occupied by the regiment that suffered.

But to return to the west coast of Africa. In 1836, H.M.S. *Scout*, under the command of Capt. Robert Craigie, proceeded to the west coast; and by a careful observance of the stringent "General Orders" of the senior officer on the station, "that no ship was ever to remain in port more than forty-eight hours at any one time," and that "officers were so far as was practicable to avoid entering any of the rivers on the coast," only two cases of fevers occurred in her during the first year, and these were traced to two day's stay at Sierra Leone. In the month of April, 1837, Capt. Craigie was obliged to ascend the Bonny river, in the *Scout*, as far as King Peppel's town, for the protection of the British mercantile interests there. On this occasion, he also took the *Dolphin*, a brigantine, with him, and left the *Lynx*, another brigantine, anchored at the river's mouth. The *Scout* and *Dolphin* were detained nearly a week at Bonny town, and on leaving the river, fever broke out in both vessels, and their united loss by death amounted to five officers and seventeen men and boys, while on board the *Lynx* not one was even attacked. Bonny town is only about six miles from where the *Lynx* was lying, consequently there could have been very little, if any, difference as to the "heat and humidity" of the atmosphere in the positions of the vessels that suffered and that which escaped.

Capt. Brunswick Popham commanded the *Pelican*, with a complement of 110 white men, for four years and a half, on the east and west coasts of Africa. During this time, his loss by death amounted to three Europeans. He made it a rule to avoid rivers, his boats having on one occasion only been in the Bonny, and that for a very short time. Capt. Popham was on the station during 1835-6-7-8, and part of 39, during which the mortality on the coast is but too well known. In short, it seems to me perfectly clear, from the evidence of many old African cruisers, non-professional as well as professional, and from my own experience, that, as a general rule, a ship will continue healthy on the west coast of Africa, if she is clean internally, and keeps at sea, and that disease will appear if she remains much near the shore, or has intercourse with the rivers. If we admit the immunity in the one case, and the occurence of disease and death in the other, surely the destructive agency must have been owing to something connected with the land, which is acted upon by the same meteoric agencies as the sea, with this difference, that the land and sea breezes become more feeble as we advance into the interior. The sun is mainly effective *from below* in heating the atmosphere on land and water, both of which absorb its rays and communicate them to the air above. Theoretically, we should expect nothing pernicious to be evolved from the sea, the sur-

face of which is nearly always in a state of greater or less agitation; and practically we find the conclusion to be just. On shore, on the contrary, we have all varieties of soil, in many conditions of which we have a right to infer, that gaseous evolutions will take place by the action of heat, and experience but too plainly tells us, that wherever certain conditions are present within the tropics, there, in general, disease is most rife. It will no doubt be said that we have, as yet, no chemical evidence of the existence of malaria. But because its precise nature is unknown to us, are we, in the face of such destructive results, to deny its being? We may just as well say, that small-pox and other exanthemata cannot be propagated through the medium of the atmosphere, although the constitution of their poisons has not as yet been recognized by any "chemist or physiologist."

Provided that men have not been for a considerable time exposed to the noxious exhalations within rivers, it seems abundantly evident that their effects are in a great measure counteracted by the air of the open sea.

From these and numerous other instances, it would appear that the action of miasma is quite analogous to that of other poisons, inasmuch as its injurious effect is in proportion to the amount taken into the system. By remaining long in rivers, the quantity imbibed will be very commonly sufficient to destroy life, while a short stay in such localities will only produce a temporary disorder of the functions.

My humble opinion is, that the fever-poison may be absorbed by the skin, but that it vitiates the blood, chiefly by being inhaled during respiration, which is quite in accordance with all we know regarding the permeability of moist animal membranes to gaseous substances. Why the poison should affect the blood of the white man, and not that of the negro, is certainly difficult to explain, in the present imperfect state of our knowledge of the physiological differences between the two races. We know, however, that the skin of the negro is in a constant and profuse state of exhalation, and the poison may thus pass out of the system as rapidly as it is inhaled. Moreover, the activity of the vessels on the surface of the skin makes it less favourable to absorption.

It is not in the tropics alone that we are to look for evidence of the injurious action of miasmata. In a certain degree, the same effects, in virtue of the same cause, result in the densely-populated districts of our large cities at home. From the evidence given before the "Commissioners of Inquiry into the State of large Towns and populous Districts," it would appear that typhoid and puerperal fevers, which are diseases in the same category as yellow, remittent, and intermittent fever, are found to prevail chiefly, if not almost exclusively, in localities where large accumulations of filth are met with, or in the neighbourhood of pent-up, foul, or open drains.

In conclusion, I beg to add, that I have always been and ever shall be ready to be enlightened on that important subject, the cause of tropical fevers; but I cannot receive vague and unconditional state-

ments, especially when they are in direct opposition to the deliberately-formed opinions of men who have seen much of the disease, and whose acknowledged abilities will qualify them to form just conclusions—conclusions borne out by well authenticated facts, and which perfectly harmonize with my own experience during a period of nearly fifteen years' service, chiefly within the tropics.

Athenæum, Sept. 21, 1844, *p.* 850.

[We perceive a notice in the Medical Gazette, of the African fever having broken out at Woolwich, on board the *Growler* steamer, recently arrived from the coast of Africa.]

[The following remarks by Dr. Cowan, in his "Retrospective Address," taken in a great measure from the papers of Dr. Golding Bird, in the Medical Gazette for Feb. 10, 1844, may not be inappropriate in this place.]

A few years ago it was discovered by Professor Mülder, that various animal elements, when dissolved in a dilute solution of potass, resulted in a fluid of identical composition and qualities. The body he named protein; and he has since ascertained that it combines with two or more quantities of oxygen in the blood. These changes are effected, according to Dr. Mülder, by the process of respiration, which, when accelerated, gives to the blood its buffy or inflammatory covering. Fever he supposes to depend on the development of more oxyprotein than in health; and when a large excess of this matter is collected, all the phenomena of inflammation take place, and these compounds of protein are effused as inflammatory products.

Whilst Mülder agrees with Liebig in the opinion that an increased absorption of oxygen exists during fever and inflammation, he altogether differs from him as to the element which acts as the absorbing agent, believing that there is no evidence of the process being effected by the change of the iron of the red particles from a protoxyde to a sesquioxyde. He offers no speculation as to the cause of fever, which he simply regards as the pathological condition which induces the generation of the oxyprotein. Dr. Bird justly remarks, that like all chemical theories of health or disease, they should be received with caution, as a more melancholy error can scarcely be committed, than that of explaining the phenomena of the animal organism too exclusively on chemical principles.

The sagacious and cautious Andral concludes, that in the actual state of our knowledge, the character of fevers remains still a negative one; that is, the fever which accompanies the pyrexiæ does not acknowledge, either in the solids or in the blood, any alteration which can account for it—a conclusion not very flattering to human vanity, after the infinite attempts which have been made to establish a more definite result.

Dr. Metcalfe, in his recent and most remarkable work on "Caloric," ascribes fever to a reduction of temperature, and considers all the varieties of fever as modifications of the same disease, arising

from different degrees in the intensity or duration of the causes producing them—the extent to which the vital properties of the blood become impaired, determining either a quartan, intermittent, or the more deadly forms of typhus, yellow fever, &c.

Dr. Cowan's Retros. Address, in Prov. Trans No 1, *N. S.*, 1845, *p.* 11.

4.—*Sleeplessness during Fever.*—The most important medicinal property of tobacco is the application of the moistened leaves to the bare scalp in severe cases of fever attended by pervigilium and delirium. If it succeed in inducing sleep under these circumstances, it will be an invaluable remedy, for we know of no more deplorable condition, or one more fraught with danger, being the forerunner of collapse and death. We have been told of a curious and efficacious use of tobacco in America: the fact was not stated by a professional person, though by one of undoubted veracity. A leaf of tobacco is often applied over the radial artery, or the pulse at the wrist. It seldom fails to produce free vomiting. Its powerful effects when applied to the whole surface of the scalp may be easily conceived.—*Quarterly Medical Journal, Delhi, India, No.* 4.

Lancet, Aug. 23, 1845, *p.* 222

5.—ON INTERMITTENT FEVER.

By Dr. C. J. B Williams, F.R S., &c. &c.

If, says Dr. Williams, you see much of intermittent fever in malarious districts, you will find that there are a great many cases that are neither quotidian, tertian, nor quartan, nor do they belong to any type at all. There are irregular paroxysms occurring every now and then, in one case without any cause; in another, arising from an obvious cause. The malarious poison alone is often not enough to produce the fit; but some additional cause, such as exposure to cold, error in diet, or something else, disturbs the system, and brings about the fit. Thus ague will become developed as the result of an accident. A person falls down and sprains a joint, breaks a limb, or becomes bruised, and the seeds of ague which were in the system before now manifest themselves. Those who see most of ague are more fully aware of this, than you would be if you took your account of intermittent fever only from what you read in books.

Malarious influence certainly operates on the body by greatly disturbing the circulation. How it produces that effect it might be difficult to explain, and we have not time to stop to investigate it; but this is a fact, that it causes great internal congestion, and a corresponding amount of intro-pulsion of blood from the surface. The surface becomes pallid, exsanguineous, while the blood accumulates in the internal organs. This seems to be the immediate, the essential effect of malarious poison, and it occurs whether there be a fit of ague or not. A fit of ague is a re-action against this irregularity of the circulation—that is, increased action of the heart and blood-

vessels, under the influence of which the circulation is in some degree set right, the congestion of the internal viscera is in a great degree reduced or diminished, the secretions which had been stopped are restored; the pallidity of the surface is in some degree removed also, and the balance of the circulation again established. In this way, we see that the paroxysm of intermittent fever is a sort of struggle between the protective power of the system and the poison; and hence we can easily perceive why, when the paroxysm of ague is imperfect, the effects of the disease on the system are more severe, and why the body actually suffers more under these circumstances, than it does where the fit is complete and vigorous.

The same observation is applicable to the case in which the cold fit is long, and the hot and sweating stages are short and imperfect. In these cases, although there is re-action, it does not overcome the disturbance of the system, which the malarious poison has produced, and therefore leaves it accumulating in it. Three of my cases illustrate this. Although there had been paroxysms, yet the disease gained on the constitution; the cold fit became longer as the disease prevailed, and the health declined in proportion.

Great internal congestion is the common effect of malarious influence, and it continues sometimes after the paroxysms have ceased, and particularly where they are irregular and imperfect.

[Dr. Williams accounts for the diseased state of the blood, which so often exists in these cases, not simply by the action of the malarious poison, but also by the congestive condition of the internal organs which the malarious poison produces. He says,]

As this is a matter rather important, I will occupy two or three minutes in explaining it. The ascertained effect of malarious poison on the system is, to cause a great amount of congestion of the internal organs. Blood accumulates in them, and so long as it accumulates it does not circulate; it does not undergo those changes which we know to be necessary for its reparation, and its very existence in a state of integrity. Blood, whether accumulated in a part, or circulating, is perpetually prone to chemical change. In the worst forms of intermittent fever, the effect is aggravated by the great intensity of malarious poison, which rapidly overcomes the vital powers of the system. What do we find in hot climates? Intermittent fevers assume a malignant form; they become typhoid nearly in their commencement—that is, accompanied by an enormous amount of congestion in the internal organs, and by a palpable change in the condition of the blood in them. The spleen, in the case of the Walcheren fever, was represented by writers as resembling a bag of tar, the blood being as black as pitch. A similar account is given of pernicious intermittents of Italy, in which the spleen is so gorged with blood that it sometimes becomes ruptured, and gives exit to a mass of corruption. The blood not only stagnates, but accumulates in an altered state, prone to decomposition. In this country, we have no causes operating in such intensity; the effects, therefore, fall short of this; but even here the blood so accumulated must necessarily be disordered. Many facts seem to prove

that wherever there is an accumulation of blood in an organ, that blood does not undergo the usual process of circulation and purification; there noxious matter is engendered; the blood is, as it were, destroyed for the purposes of the economy; and if, under a change of circumstances, it is restored to the circulation, instead of being available for the circulation, it has to be removed as excrementitious matter unfit for the body.

This suggests to us that in the treatment of disease arising from a malarious influence, we have not only to cure the paroxysms by anti-periodic medicines, as they are called—by tonics, which seem to operate by preventing or removing the internal congestions—but we have likewise, as a leading indication—an indication which prevails the more the longer the disease has lasted, and the more visceral disturbance it has produced—to promote the elimination of the injured blood from the system. A great deal of the blood is bad, and never can circulate again comfortably in the vessels of the system; and to rid them of this effete matter, you must keep the drains free; you must increase the excretions, at the same time that you are giving anti-periodic medicines. Lastly, you are to attempt to fulfil a third indication—that is, to restore what has been lost, by promoting the formation of good blood, which is to be effected by general tonics, particularly iron and good living—nourishing diet—as much as the digestive organs can bear.

Medical Gazette, Oct. 24, 1845, *p.* 1095.

DISEASES OF THE NERVOUS SYSTEM.

DIGITALIS IN EPILEPSY.

By Dr. Corrigan, Dublin

[The foxglove has from time immemorial been administered for epilepsy in the rural districts of Ireland. In many instances, success has followed on its exhibition, but the effects have been so violent, from the quantity administered (the formula is ℥iv. to the pint of water, a quarter of this for a dose) that the profession has shrunk from using it. Sir P. Crampton however informed Dr. Corrigan, in 1828, that he had cured three cases out of four by it, though he did not venture beyond the first dose.]

In the year 1831, Dr. Sharkey, of Cork, in a paper in the Lancet, drew the attention of the profession to its good effects in the disease, given according to a similar formula. The effects of a similar dose (four ounces) were vomiting, soreness of epigastrium, cold extremities, cramps, and great depression and irregularity of pulse, continuing for several days. I exhibited the remedy myself in the same form, and I am not surprised that the profession should shrink from employing it. The first dose produced the most violent

vomiting, followed by cold sweat, feeble and irregular pulse, and these symptoms again by intense gastritis, accompanied with great sinking of the vital powers, and double vision, which continued for several days, sufficient to deter me from ever again venturing on its administration in such a dose. There are some circumstances connected with the effects of this large dose that may be worth noticing here. It was given at ten o'clock, A.M.; at twelve o'clock the pulse had fallen thirty beats, viz.—from eighty-six to fifty-six, and there was slight headach, with very slight nausea; it was not until eight o'clock, P.M., ten hours after the administration of the dose, that the violent symptoms set in. It then occurred to me, that as it is a remedy possessing a cumulative property, I might succeed in saturating, as it were, the nervous system with its sedative property, without the risk of inducing those frightful effects which follow on the sudden exhibition of the large dose, and I believe I can now venture to say, that this important point in practical medicine can be gained. After many trials of its preparations, I give the preference to the infus. digitalis of the Dublin Pharmacopœia; but I cannot too strongly insist on the necessity of the greatest attention being paid to see that the leaves are well prepared, and of the latest gathering; one of the cases narrated will exemplify the necessity of this caution. The mode of administering is to begin with ℥i. of the infusion every night at bed-time, increasing it after a week to ℥iss, and after another week to ℥ij, beyond which it is rarely necessary to go, and continuing it until sickness of stomach and dilated pupils are observed, when the dose is to be diminished by ℥ss or ℥i, until the maximum dose that can be borne without inconvenience is ascertained, at which the administration is to be continued for two or three months. Given in this way, its exhibition is attended with no inconvenience, beyond an occasional attack of slight sickness of stomach in the morning, or headach, &c., when the medicine is to be omitted, and a day or two is to be allowed to pass over before resuming its use. With the exception of these symptoms, there is no perceptible effect beyond slow action of the heart; and the patient during its use is able to follow his ordinary avocations.

[Dr. Corrigan then gives some cases in which he gave this remedy. The first was a Mr. M., aged twenty-seven, who in August, 1840, suddenly appeared, in the middle of the night, in a state of violent mania, which continued some minutes. From that time to March, 1841, when Dr. C. was consulted, these attacks frequently occurred at night, the longest interval being five weeks. The attacks are described as commencing with a noise in the throat, followed by a suffocative convulsion, in which he awakes in great distress; he then falls into a fit of general convulsions, and on this ceasing remains delirious and ungovernable. For long he was only subject to these attacks during the night, but lately he had one in the day time. Appetite good; bowels regular; but the pulse full, and there is almost constant noise in the head. He had taken nitr. silver, cupri ammon., strychnine, &c., without benefit.

Dr. Corrigan directed him to be cupped on the back of the neck, an issue to be afterwards inserted, and ordered half-a-grain of antim. pot. tart. to be taken every night. This was changed to turpentine in drachm doses nightly, with a drop of ol. valerian. Under this treatment the fits ceased for a time, and the medicines were discontinued. In ten days after they returned with increased violence, and in August, Dr. C. says,]

I ordered him the infus. digitalis of the Dublin Pharmacopœia, in the dose of a wine-glassful every night at bed-time, to be increased if he could bear it; he increased the dose to ℥iij. every night, and on

August 15, he called on me with greatly improved spirits; he has had but one slight attack within the last thirteen days.

Sept. 22. The attacks are now about one in every ten or eleven days, but very slight, and preceded often for a day by a frequent desire and inability to pass urine. He has had this symptom, however, occasionally before he commenced the use of the digitalis.—*The digitalis to be continued in the same dose.*

Oct. 20. The attacks are now so mild that they do not awake him, there being nothing more than a slight convulsive motion of the throat; he only learns of their occurrence from his brother, who occupies a bed in the same room with him. As the digitalis was not producing its specific effects, I ordered him to take ℥iv. of the infusion for a dose; this produced no more visible effect than the former dose, when an accidental circumstance led him to obtain a repetition of the infusion from a different supply, which must have been much more carefully preserved, for in a few days he was obliged to discontinue its use, and then on returning to it, to reduce the dose to ℥ij as at first. In this dose, he continued its use for about three months; the attacks of epilepsy gradually became milder and milder, and at length ceased altogether; and I have had the gratification of seeing this gentleman very frequently in good health and spirits, a period of nearly four years having now elapsed without a return of an epileptic attack.

[The second case was a young lady, twenty-seven years of age. The first attack appeared as stupor, with which she was seized while riding on horseback. These increased in frequency and violence, and at last settled down into true epileptic fits. She had had leucorrhœa, but this ceased after a visit to Harrogate, by which her general health was also very much improved. Dr. Corrigan met in consultation with Dr. Neligan, and the report thus continues,]

We prescribed for her the infusion of *digitalis in doses of* ℥*ij, and ordered shower baths.*

Sept. 17. The draughts produced sickness, and occasionally vomiting in the mornings; when these symptoms occurred, they were omitted for two nights, and then resumed; they do not now cause the morning sickness; the appetite and general health continue good, and the only apparent effect of the draught is lowering of the pulse, which beats now about fifty. There has been only one slight attack, which occurred the morning after the first of the

draughts, and which proceeded no further than loss of power; the draughts to be continued. Dr. Neligan informed me in October, that there had been no return of the attacks; the infusion of digitalis was continued in the same dose, and was occasionally followed by sickness in the morning very much resembling sea-sickness, but as before, there was none felt during the night. The draughts were then discontinued, to be again as before resumed. This case was lost sight of, but the effects of the digitalis, for the short period it was given, were most satisfactory; previously to using it, the attacks were very frequent, being often of daily occurrence, while on commencing the remedy they almost invariably ceased, and did not return as long as the case was under our observation.—*Dublin Hospital Gazette, 15th May*, 1845.

Lon. and Edin. Mon. Jour. of M. S., June, 1845, *p.* 451.

[Dr. Cormack adds in a note, that foxglove is mostly beneficial in cases of epilepsy where there is much arterial excitement, but as such is not usually present in this disease, it is not likely to prove extensively useful. He states that he has found indigo act more like a specific in epilepsy than any other remedy.]

7.—TREATMENT OF NEURALGIA.

By Dr. Cowan, Reading.

[Most of the remedies mentioned by Dr. Cowan have been already referred to in the different volumes of this Retrospect. It is wholesome, however, to be reminded of such practical facts.

Perhaps there are few diseases which seem more to require fresh and repeated therapeutic experiments than neuralgia in its various forms. Belladonna has been more neglected in this country than might have been expected from its recognised sedative powers.]

Dr. Hutchinson, of Nottingham, has communicated the result of his extensive experience of its curative value in neuralgic affections, and the evidence adduced will probably encourage others to more frequent trials of its therapeutic powers. He considers its primary action as excitant upon the brain and sedative upon the spinal system, while that of opium is the reverse.

If this observation prove correct, belladonna should always be preferred to opium in convulsive affections induced by direct or reflected irritation of the true spinal system, and avoided in congestive or inflammatory conditions of the brain. The constitutional effects are quickly induced by its external application, or by a quarter of a grain to a grain given internally, three or four times a day. No benefit has been observed until the iris is affected.

Mr. Flood, of Leeds, confirms its curative value, but considers its action purely sedative, and therefore adapted to every species of nervous excitement.

The inoculation of solutions of morphine and veratrine, by numerous small punctures with a lancet point, over the affected nerve, appears to have been successfully practised by Messrs. Lafargue, Jaques, Uytterhoeven, and others, and is at once a rational and convenient application.

M. Rougier, to test the completeness and permanence of the cure by morphine, administers small doses of strychnine. He says, that if the cure is satisfactory, the specific effects of strychnine decrease from the first, notwithstanding an increase in the strength and frequency of the dose; but if not, the reverse. The idea is an ingenious one, but we doubt its accuracy.

The sulphate of strychnine, in doses of one-twelfth of a grain two or three times a day, occasionally combined with sedatives and quinine, is highly recommended by Dr. John Waters; and several Italian physicians unite in praising the valerianate of zinc, in doses of one or two grains. Another observer states that he has tried the strong infusion of tobacco in frictions, with complete success in two cases, and a preparation of the extract mixed with cerate, is suggested as a more convenient application.

A dossel of lint steeped in the liquor ammoniæ, and applied to the alveolar border of the palate until an abundant effusion of tears is excited, is said to act very rapidly upon facial pains.

Electro-puncture has been strongly advocated by Dr. E. Hermel, who thinks it available in all cases of idiopathic neuralgia, and also useful when paralysis has followed severe pains. This means has before found a zealous defender in Dr. Shuster; and though his statements may be considered as overstrained, yet there can be no doubt that his favourite remedy has frequently succeeded when other measures have failed.

Dr. Duclos has written a memoir on the good effects of *pressure*, to a degree that is painful, applied between the angle of the jaw and the mastoid process, in arresting facial neuralgia, nervous headache, and in many cases of epilepsy and hysterical attacks. In occipital neuralgia it is to be applied between the splenii and complexus muscles; and in toothache, on the gum, over a neighbouring sound tooth. Melancholy, says Dr. Duclos, may be dispersed by reiterated compression of the facial nerves. He is, in fact, an enthusiast for pressure; and though he has probably pressed his conclusions beyond their sober limits, a good practical hint may be gleaned from his researches.

In neuralgia of the breast, Dr. Rufz, of Martinique, advises two or three sections of the gland, by a tenotome under the skin if other means have failed to relieve. Two cases are related in favour of the suggestion.

Cephalalgia.—The association of opium with vascular congestion of the brain, is so general, that its employment against pains within the cranium is either timidly adopted or wholly laid aside.

Pain, M Despeaux justly argues, is no evidence of vascular excitement, nor does it necessarily induce it when even continued and severe; when unaccompanied with general febrile disturbance, this

symptom is most successfully treated by opium, whether in the head or elsewhere. After premising in some cases a moderate bleeding, M. Despeaux administers a quarter of a grain of morphine every hour until relief is obtained; and since adopting this plan, he says that his success has been most gratifying. We are satisfied that opium is often available against headache where many object to its employment; and when no particular idiosyncracy prevails, we have never seen anything beyond very temporary inconvenience result.

Dr. Cowan's Address, Prov. Trans.. No 1, *N. S.*, 1845, *p.* 63.

8.—TONICS AND BELLADONNA IN NEURALGIA.

By George Burrows, M.D.

[In some cases of chronic neuralgia, Dr. Burrows has found tonics and belladonna combined, of great service. The particulars of two of the cases are as follow:—The first was a young woman, æt. 26, pale, cachectic-looking; features distorted and drawn to the right side; pulse 82, small, soft; bowels confined; catamenia regular; complains of severe and constant pain in the face, worst on the right side. The pain is sharp and darting, and entirely prevents sleep. She has suffered from rheumatism for two years, and occasionally had pain in the face, which for seven weeks before, had been very severe.

Paralysis of the muscles of the left side of the face was, from the distortion, at first suspected. A sudden loss of consciousness which occurred a few days before strengthened this idea, but it was found that sensibility and motion of the face were unimpaired. The symptoms were regarded as dependent upon impaired constitution, and she was ordered—

Morphiæ Acet. gr. ss. and Mist. Camph. h. s. s.

She slept better, but the pain increased. As the bowels had not been opened, she was ordered—

Ol. Ricini, ℥ss. statim. Quinæ disulph. gr. v. 6tis. horis.]

May 7th.—No benefit having been derived from the use of quinine, ordered—

Mist. Ferri Comp. 6tis horis. Pil. Sapon. Co. gr. v. omni nocte. Vin. Rubri, ℥iv. quotidie.

24th.—The Mist. Ferri Comp. has been given every four hours; it has produced pain and relaxation of the bowels: the facial pain has been quite relieved for a week, but has now returned in the same places as before; tongue clean; pulse 80, small; bowels not open. The pain in the face continued almost without remission for a week. Ext. Belladonnæ was applied to the right orbital region, and allowed to remain several hours; it produced dilatation of the pupil, and dimness of sight, but did not relieve the pain.

The Ext. Belladonnæ was then given internally, in doses of gr. ss. every six hours, and in the course of a few days the pains of the face, and the spasm of the muscles, remitted. She obtained sleep, was able to take nourishment, and has since gradually improved in health.

Remarks.—This case presents an example of one of the most common forms of neuralgia, and which is most amenable to remedies. Sedatives and tonics alone had but little influence over the disease; the Mist. Ferri Comp., and other preparations of iron, are in such cases often eminently beneficial, and we had hoped the temporary remission of this woman's sufferings after the exhibition of steel during a week was an evidence of returning health. The spasms and pains, however, recurred, but yielded rapidly to the relaxing influence of belladonna.*

[The second patient was of the same age as the former, but married. Cachectic, anxious appearance; bowels confined. The left arm is extended, and drawn to the side; fore-arm and hand awkwardly pronated; fingers violently extended and adducted. The left leg almost similarly affected; neither of these limbs can be moved by voluntary power. Severe pain affects both, greatest at the joints. There seemed reason to believe that some structural lesion had occurred to the brain nineteen years before, when she had had three fits. Ammonia was first administered, followed by sedative draughts; and two blisters were applied to the nape of the neck. Aconitine was ordered to be applied to the painful parts.]

May 7th.—Several applications of the tincture of aconite have been made to the ankle and knee, with manifest relief to the pain; this local application was continued, and she was ordered—

Mist. Ferri Comp. ℥iss. ter die. Pil. Sapon. Co. gr. v. 6tis horis.

21st.—No decided or permanent relief ensued from the use of the aconitine; for the last few days she has been taking ext. belladonnæ gr. ss., at first every six hours, and then the same dose every four hours. The pains are greatly diminished, and only occasional; she is regaining power over the left arm and leg; her countenance is cheerful; she sleeps well; tongue clean; appetite good; pulse 84, soft.

(The belladonna was discontinued shortly after this note, on account of dimness of vision but without dilatation of the pupils. She was ordered quinæ-ferro-citrat. gr. x. 6ta quâque horâ, and has gradually improved in health up to this date, June 9th, when she is up and walking about.)

Remarks.—The relief obtained in this case of spasmodic neuralgia from the use of belladonna was most unexpected and gratifying. The patient's constitution had, it is true, very much improved under the administration of tonics, sedatives, and a generous diet. But the pain and spasms continued during two months of this plan of

* This woman has subsequently suffered a relapse.

treatment, whereas there was a marked and progressive improvement within a few days after the employment of the belladonna, and no return of the spasm upon the discontinuance of that powerful remedy.

Medical Gazette, July 18, 1845, *p.* 483.

9.—ON THE PHYSIOLOGICAL AND MEDICINAL PROPERTIES OF ACONITE.

By Alex. Fleming, M D

[The following remarks are taken from an Inaugural Dissertation for which the Gold Medal, at the graduation of 1844, was given by the Senatus Academicus of Edinburgh University. The author, besides performing experiments on animals, had ample opportunity for studying the action of this remedy on man. Its physiological action on man in small doses, he considers under four heads, according to the degree of operation.]

First Degree of Operation.—In the course of twenty minutes or half an hour, after the exhibition of five minims of the tincture, a feeling of warmth in the stomach is usually experienced, which is occasionally accompanied by slight nausea and oppression of the breathing. After the lapse of thirty or forty minutes, this sense of warmth is diffused throughout the body, and, in a few minutes more, is attended by numbness, tingling, and a sense of distension of the lips and tongue. There is also tingling at the tips of the fingers, and a peculiar sensation is felt at the roots of the teeth. This feeling of warmth soon disappears, but the numbness and tingling of the lips and fingers continue for a period, varying from one to three hours. Slight muscular weakness is generally experienced, with indisposition for exertion either mental or corporeal. In about half an hour more, the pulse is found to be diminished in strength; and in another hour, both the pulse and the respiration have become less frequent. Thus, a pulse, which, in the normal state, beats seventy-two in the minute, will, by that time, have fallen to about sixty-four, and the respirations, supposing them to have been eighteen, to fifteen or sixteen.

Second Degree of Operation.—Should a dose of ten minims be given at first, or the first dose of five minims be succeeded in two hours by another of equal amount, these symptoms supervene more rapidly, and with greater severity. The tingling extends along the arms, and the sensibility of the surface is more or less impaired. In an hour and a half, the pulse will probably have fallen to about fifty-six beats in the minute, and become smaller and weaker than before, still maintaining, however, perfect regularity. The respirations will have diminished to about thirteen, presenting, at the same time, a slow labouring character. Great muscular debility is now experienced; and giddiness, with confusion of sight, comes on when

the erect posture is assumed. The individual sinks into a lethargic condition, evinces great disinclination to be disturbed, although he rarely falls asleep, and complains much of chilliness, particularly in the extremities, which are cold to the touch. These phenomena continue in their full intensity from three to five hours, when they gradually disappear; a sensation of languor, which lasts for several hours more, alone remaining.

This is the utmost extent to which I would recommend the physiological effects of Aconite to be carried, in order to obtain, with safety and success, its therapeutic action.

Third Degree of Operation.—On the administration of five minims more, two hours subsequent to the last dose, the sense of warmth, and the numbness and tingling, again spread rapidly over the body. The sensibility of the surface is still further diminished; lancinating pains in the joints are occasionally complained of; the headach, vertigo, and dimness of vision, are aggravated; the countenance grows pale and anxious; the muscular feebleness increases; the voice becomes weak, and the individual is frequently impressed with the dread of approaching dissolution. Occasionally the pulse is reduced still further in strength and frequency, perhaps falling to 40, or even 36 beats per minute, but still maintaining its regularity. More frequently, however, it rises to 70 or 80, and becomes small, weak, and probably more or less irregular. The respiratory movements are also irregular, being either short and hurried, or deep and sighing. The surface is moist, and still farther reduced in temperature. Sickness may now come on; and, if formerly present, is much aggravated, and probably attended by vomiting. These symptoms do not entirely subside for one or two days.

Fourth Degree of Operation.—On the administration of a fourth dose of five minims, two hours after the third, the symptoms assume a more alarming character. The countenance becomes pale and sunken; froth issues from the mouth, and the prostration increases. Some thus affected have stated, that they felt as if dying from excessive loss of blood. Consciousness usually remains; or there may be slight wandering delirium, as occurs also after profuse hemorrhage. The voice is whispering, or is altogether lost. The pulse becomes still smaller, weaker, and more irregular; and the breathing more imperfect. The surface is colder than before, and is covered with a clammy sweat.

I have seen patients recover from this state under the administration of proper remedies.

When the action of the drug is carried to a fatal extent, the individual becomes entirely blind, deaf, and speechless. He either retains his consciousness to the last, or is affected with slight wandering delirium; the pupils are dilated; general muscular tremors, or even slight convulsions, supervene; the pulse becomes imperceptible, both at the wrist and heart; the temperature of the surface sinks still lower than before; and at length, after a few hurried gasps, death by *syncope* takes place.

It must be borne in mind, that these symptoms do not, on all

occasions, occur in the uniform manner in which they have now been described. On the other hand, some of them may be entirely absent; while others, not yet mentioned, but to which I shall afterwards allude, may appear.

Four practical inferences are drawn from the statements just made, as to the action of the drug upon the cerebro-spinal and muscular systems, viz:—

1. That it is calmative, anodyne, and anti-spasmodic.

2. That it is an advisible antiphlogistic in apoplexy, phrenitis, or any disease in which the circulation of the brain is excited.

3. That it is contra-indicated in headach, arising from anemia, or chlorosis; and wherever there is a torpid or paralytic condition of the muscular system.

4. Its properties suggest its employment in convulsive or spasmodic diseases.

[Dr. Eades, in a paper which we noticed in Art. 3., Vol. XI., arrived at the conclusion that it is "a sedative," "a paralyser of the nerves of sensation," "that it does not cause stupor or convulsions, and that when these occur, they take place a short time previous to death, and appear to be caused by a want of due circulation in the brain." These, it will be seen, are pretty much the same as the above-mentioned.]

The Practical Inferences which Dr. Fleming deduces from a consideration of the action of Aconite on the circulation, are as follow:—

1. That it is a powerful antiphlogistic.

2. That it is calculated to be of great value in all cases, where there is inordinate activity of the circulation.

3. That it is contra-indicated, when there is obvious mechanical impediment to the passage of the blood, particularly through the heart or lungs. It is requisite, therefore, in every case, to ascertain that no such obstruction exists before commencing its use.

4. That it is contra-indicated whenever there is irritability of the circulation, with great diminution of power, such as occurs after severe venous hemorrhage.

The diseases in which Aconite is said by Dr. Fleming *to be useful*, are *neuralgia* in various forms, *hemicrania*, *angina pectoris*, *cephalalgia*, *general pains of fever*, *certain diseases of the heart*, *acute rheumatism*, *lumbago*, *erysipelas*, *cancer*, *pruritus*, *and hysterial spasmodic asthma*.

Those in which its use is most satisfactorily established are neuralgia and rheumatism. It is decidedly objectionable in several of the above-named affections, particularly in the general pains of typhus and other fevers, where the *vis vitæ* is at a low ebb. With the following extracts, we must pass on without commentary to the next department of the work.

Neuralgia of the Thoracic and Intercostal Nerves—Spinal Irritation.—I have found the topical application of the tincture extremely successful in the treatment of the neuralgic pains, so frequently

complained of by females, as occurring about the seventh, eighth, and ninth ribs of the left side, as well as of *spinal irritation*, both when co-existing with, and independent of, these pains.

Neuralgia of the Extremities. In a case of crural neuralgia of the right side, where the pain was chiefly seated in a circumscribed spot on the inside of the patella, the external application of the tincture was, in eight days, followed by a complete cure. The disease, which occurred in a female of thirty years of age, was of three years' standing, and the part had been frequently leeched and blistered without effect—the potential cautery having been the only application which had afforded any relief. An interesting case of neuralgia of the feet, where the internal administration of the drug effected a complete cure, and one of neuralgic stump, in which much temporary relief was afforded by the same means, will be found in the Appendix. Dr. Cormack has communicated to me a case of severe neuralgia of the right hand, which was at first treated successfully by the internal use of the tincture. The pain afterwards returned in two of the fingers, to a slight extent; but the patient could not be prevailed upon to resume the remedy, in consequence of its having formerly produced some dimness of vision.

Two cases of neuralgia of the fingers, in which the Aconite was had recourse to with success, are noticed in the Table of Neuralgic Cases.

Of the twelve cases of *sciatica* in which I have used the Aconite, seven complete and two temporary cures were effected; two cases were partially relieved, and in one only was no benefit experienced. An analysis of these cases will be found in the table; and one of them is, for the sake of illustration, detailed in the Appendix. As far as my own experience goes, I believe it will be found most useful in those cases of sciatica, which appear to owe their origin to a congested or inflammatory condition of the nerve.

[Aconite was first recommended in acute rheumatism by Dr. Störck, and various other physicians have since followed the practice.]

The improvement following the administration of Aconite is often very speedy, some alleviation of the pains being occasionally experienced in the course of an hour after the first dose has been taken, while there are few cases in which decided relief, with abatement of the redness, tension, and tenderness, is not obtained in a few hours. A longer period seems to be required to disperse the inflammation in the smaller joints than in the larger ones.

Aconite not only effects a cure in a shorter period than any other mode of treatment, but appears to possess the great negative advantage of not increasing the liability to extension of the disease to the membranes of the heart. Indeed, it seems rather to protect the patient from that dangerous complication.

It may be thought that as aconite weakens the heart, it is probable that it will predispose that organ to suffer in the same way as blood-letting; but this distinction must be borne in mind, that aconite acts as a pure sedative to the vascular and nervous systems, whereas

blood-letting—although it produces a similar action when practised to a moderate extent,—when performed largely and repeatedly, has a *peculiar* effect in increasing the irritability of the heart. In a strong and healthy subject, with high inflammatory fever, a free blood-letting practised at the outset, will not only be of service, in affording more rapid relief to the patient's sufferings, but will place his system in a more favourable condition for the action of aconite, which, if *properly administered*, will prevent reaction, and remove the necessity of abstracting more blood.

Should *more extensive* trials confirm the conclusions drawn from the limited data here offered, its great superiority over the ordinary modes of treatment will be undeniable. It is true that opium is not open to the objection of increasing the tendency to cardiac affection, but while its stimulant action on the vascular system would induce us, *a priori*, in the treatment of a disease marked by great excitement of that system, to give the preference to aconite, which from the first exerts a depressing effect upon it, actual observation, as far as it has yet been carried, leads to the same conclusion. Thus the painful symptoms are alleviated at an earlier stage of the disease, under the exhibition of aconite, than of opium, while the final cure is more rapidly effected; the shortest average duration of treatment by opium, viz., that furnished by Dr. Corrigan of Dublin, being several days longer than that effected by aconite. Nor must it be forgotten, that the constipation produced by the opium has frequently appeared to protract the disease.

In all the cases which I have treated with aconite, the convalescence was extremely short, and there was much less stiffness of the joints than usually remains after the ordinary modes of treatment.

Aconite seems equally valuable in rheumatic fever, and in acute synovial rheumatism. In the latter disease, Dr. Lombard has found it to contribute powerfully to the absorption of the fluid effused into the joints. Friction of the affected joints with the tincture, also assists materially in effecting the same object, as well as in relieving the pain.

Dr. Lombard is of opinion, that aconite acts in acute rheumatism as a specific. I am inclined, however, to refer the good effects which follow its use entirely to its great power as a sedative of the nervous and vascular systems; or, in other words, to its properties as an *anodyne* and *antiphlogistic*. I do so, because I have never seen much benefit result from its administration, unless when given to an extent sufficient to develope its physiological action in considerable intensity.

Chronic Rheumatism.—Aconite may be used both internally and externally in this disease. The internal administration seems to be perferable, in what has been termed the active chronic rheumatism; that variety which is, perhaps, properly speaking, only a very mild form of the acute rheumatism, being attended with some heat and swelling of the part affected, and slight constitutional disturbance. On the other hand, I would recommend the external application of the tincture in what is termed the passive chronic rheumatism,

'characterised rather by coldness and stiffness of the painful joints, with entire absence of constitutional fever.' In every case, however, should the mode of treatment adopted fail to afford relief, the other should be had recourse to; while it is frequently of service to combine the internal and external use of the remedy.

From the many opportunities I have had of testing its merits, in every form of chronic rheumatism, I can speak very confidently of its value, having found it efficacious in the great majority of cases. It possesses the great negative advantage of not—like most remedies for the same disease—weakening the strength and impairing the constitution of the patient. In one case of chronic rheumatism of the fingers, which occurred to myself, as well as in another in the hospital practice of Dr. Craigie, little more than temporary relief was obtained.

Administration of Aconite.—The alcoholic tincture of the root prepared according to the following formula is the best preparation of the drug for internal administration. It may be given simply with water, or it may be prescribed along with antimony, opium, or other remedies.

TINCTURA ACONITI.

Take of root of A. napellus, carefully dried, and finely powdered, sixteen ounces troy; rectified-spirit, sixteen fluid ounces; macerate for four days; then pack into percolator; add rectified spirit until twenty-four ounces of tincture are obtained.

It is beautifully transparent, of the colour of sherry wine, and the taste is slightly bitter.

As an *anodyne*, *anti-neuralgic* and *calmative*, five minims ought to be given at first, three times daily, to be increased daily to the extent of one minim each dose, until the physiological effects described under the second degree of operation have been produced.

As an *antiphlogistic*, five minims ought to be given at first, and repeated in four hours; by which means the second degree of operation will, in all likelihood, have been induced. In order to sustain the sedative action thus developed, two and a-half minims are to be given every three or four hours, or less frequently, according to the effect produced.

Where this mode of administration is adopted, it is *absolutely necessary* that the patient should be seen, and his pulse examined, before the exhibition of each dose. When this cannot be done, the remedy may be given in the manner pointed out for its use as an anodyne and calmative.

The *best method* of administering the remedy in *diseases of the heart*, is to give it in smaller doses than those recommended for its use as an anodyne, but more frequently repeated, as three or four minims five times daily.

Sickness may be avoided or checked by an effervescing draught, administered with, or immediately after, the dose.

External Use.—The aconitina may be applied externally, either in the form of solution in alcohol, in the proportion of one or more

grains to the drachm, or of ointment made in the following manner:—

℞. Aconitinæ, gr. xvi.; spir. rectif., m. xvi., tere optime. Deinde adde axungiæ, ʒ i, ut fiat unguentum.

If, as occasionally happens, this ointment, after two or three applications, fail to produce its ordinary effects, the proportion of aconitina must be increased to three, four, or even eight, grains to the drachm. It is much to be regretted that the difficulty of preparing the alkaloid, and its consequent high price, should prevent its more general use. A preparation of inferior quality, or, as is frequently the case, totally inert, is very commonly substituted for it in the shops—a circumstance which fully accounts for the low estimation in which it is held by many who profess to have tried it.

The tincture, however, will be found an excellent substitute. One or more drachms of it are to be rubbed over the affected part three times daily, the friction being continued at each time for a quarter of an hour, or, indeed, until the topical effects of the drug are fully developed.

It is hardly necessary to add, that, when there is any abrasion of the skin, the external application of either of these preparations may be attended with danger.*

Lon. and Edin. Monthly Journal of Medical Science, July 1845, *p.* 505.

10.—*On Frontal and Temporal Neuralgia.*—The external application of croton oil has the great disadvantages of spreading in its effects beyond the place of application, and of causing a disagreeable eruption. This disadvantage can be avoided, and the same effects produced, by the application of ol. cort. hyoscyam. with one grain of acetate of morphia, in the following manner:—A mustard poultice, prepared with cold water, is applied over the situation of the pain, and allowed to remain for an hour; frictions with the above oil are then repeated every two hours. The mustard poultice is reapplied on the following day, according to circumstances. From four to five applications are generally sufficient to cure the most obstinate neuralgia.—*Dr. Puppi in Ansterr. Medic. Wochenschrift. Med. Times, Aug.* 2, 1845, *p.* 350.

11.—TREATMENT OF NEURALGIA BY ACUPUNCTURE

By —— Rynd, Esq., Surgeon, Meath Hospital.

[A woman came under Mr. Rynd's care, suffering under acute neuralgia of the left side of the face, produced by cold. Its attacks were irregular; she had been three times salivated, and had become a confirmed laudanum taker.]

On the 3d of June a solution of fifteen grains of acetate of morphia, dissolved in one drachm of creosote, was introduced to the

* See also interesting papers on Aconite in Retrospect, Vol. I., Art 28, by Dr. Burgess, and Vol. IV., Art. 14, by Mr. Curtis, of Campden Town.

supra-orbital nerve, and along the course of the temporal, malar, and buccal nerves, by four punctures of an instrument made for the purpose. In the space of a minute all pain (except that caused by the operation, which was very slight) had ceased, and she slept better that night than she had done for months. After the interval of a week, she had slight return of pain in the gums of both upper and under jaw. The fluid was again introduced by two punctures made in the gum of each jaw, and the pain disappeared. After this the pain did not recur, but she was detained in hospital for some weeks, during which time her health was improved, her sleep restored, and she became quite a healthy-looking person. She left the hospital, on the 1st of August, in high spirits, and promised to return if she ever felt the slightest pain again. It was concluded she continued well, as she has not been heard from since.

Case II.—A thin, spare man, æt. 28, was admitted into hospital Sept. 9th, 1844, and came under Mr. Rynd's care on the 10th of November, complaining of acute pain in the right hip, thigh, and leg, to the sole of the foot, along the entire course of the sciatic nerve, and its branches, but chiefly in the main trunk of the nerve. He is unable to sleep, and quite unable to walk. He is much emaciated, and the muscles of the limb are attenuated and wasted. He has been ill for three years, during which time he has been almost confined to bed. He has frequently been treated for the disease, with calomel, to produce salivation, cupping, blistering, leeching, &c., all without any salutary effect. Exposure to cold and wet is assigned as the cause of the disease.

On the 13th of November the fluid was introduced—ten grains of acetate of morphia to a drachm of creosote, one puncture behind the trochanter, and one half way down the thigh. He was instantly relieved from pain, and walked steadily through the ward without any pain or difficulty. Before, walking increased the pain. For about half an hour after the operation, he felt uneasiness from the puncture.

20*th*. Says he is perfectly well in the thigh, and feels only a slight pain in the course of the anterior tibial nerve. The fluid was again introduced to-day to the seat of pain, by two punctures; it disappeared as before.

29*th*. Says he is perfectly well: has walked every day since; has slight stiffness in the knee from previous want of use. Ordered—

Camphorated oil to rub the knee with.

December 15*th*. Left the hospital to-day, saying he felt perfectly free from all pain and uneasiness.

February 6*th*. He walked up to Dublin to-day (twenty miles), and says that since the last operation, on the 16th of November, he has never felt his old pain, and is perfectly well.—*Dublin Med. Press.*

[In the number of the same journal, for the 26th of March, Mr. Arthur Guinness, of Clontarf, reports that he has found eminent benefit from the same plan of treatment in a case of severe neuralgia

of the leg, and also in a case of sciatica. He made the puncture with a common lancet, armed with morphine alone, made into a paste, and operated along the course of the nerve, precisely as in vaccinating a child. The effect was rapid, and no pain was produced, except slight stinging and uneasiness. In another case of neuralgia, creosote alone was tried, and with equally satisfactory results, the cure remaining permanent after some months had elapsed.

Med. Gaz., Sept. 12, 1845, *p.* 870.

12.—*Extract of Tobacco in Neuralgia.*—By S. Gower, Esq., Hampstead.—Extractum nicotianæ will cure neuralgia so that it shall not return again, and this with once using. I but a few weeks ago gave some of an aqueous solution of this extract to Mr. H——, (aged between 30 and 40,) who was on business at Hampstead, and who was then, and had long been, suffering from tic doloreux.—His wife, whom I have since seen, informed me that he had only occasion to rub it on his face once, which relieved him, and from that time he had no return of it; and likewise that three or four persons who were labouring under the same complaint, had also used it, and experienced similar relief. I have known it cure toothach speedily with once rubbing on the face.

Lancet, June 28, 1845, *p.* 734.

13.—*Sulphate of Bebeerine in intermittent Head-ache.*—[In vol. XI, p. 112, will be found an excellent article by Dr. Maclagan, "On the Medicinal Properties of Bebeerine." to which we beg to refer the reader.]

Dr. Gairdner, president of the late meeting of the Medico-Chirurgical Society, of Edinburgh, stated that he had recently been very successful in treating a case of intermittent head-ach with the sulphate of bebeerine. The subject was a young and recently married lady. There were some reasons to suspect that she might be pregnant. The fits of pain were of daily recurrence, and came on nearly at the same time. The pain when at its greatest height was excruciating. The paroxysm was succeeded by an interval of total exemption from pain. He proposed the quinine; but found his patient had the greatest objection to it, on account of the disagreeable sensations in her head which she had experienced from its use on a previous occasion. He was unwilling to employ arsenic, on account of the suspicions of pregnancy, and he therefore ordered pills containing three grains of sulphate of bebeerine in each. Of these she took three, sometimes four, each day, in the intervals between the paroxysms, with the effect of immediately diminishing the pain, and putting an end to the disease in about three or four days.

Lon. and Edin. Journal of M S., June, 1845, *p.* 482.

14.—*Radical Cure of Tooth-ach.*—If the pain be violent, the practitioner will gently, and with extreme care, wipe out the cavity

with soft cotton wool, or the more pulpy portion of lint: he will thus be enabled to detect the presence of any foreign matter, which he will cautiously remove; he will then insert some anodyne, camphor, and opium, the muriate and acetate of morphia, or simply a little wool saturated with the tinct. opii. This will allay present pain, but he will be anxious to do more, and in order to do this, he will with a sharp cutting instrument remove a layer of carious bone, and at the same time, by a sharp and dexterous movement, will excise the exposed surface of the pulp. This may be effected with little pain, if done unhesitatingly and with decision; nay, in most cases, without the knowledge of the patient. We have now a bleeding, instead of an inflamed and highly tense surface, and if we now apply* a few granules of the white oxide of arsenic, an eschar is formed in the course of a few hours, which will be totally insensible, and capable of sustaining pressure. The cavity, in this case, should be well guarded by being sealed up with wax, and it should be retained for not less than six hours. When thus treated, but little pain will be experienced, in the majority of cases not amounting to more than uneasiness, and this of half an hour's duration. In less fortunate cases, however, the pain does not acquire the intensity of ordinary tooth-ache, and is found to be entirely subdued by copious warm fomentations. When this previous excision is omitted, and the arsenic is applied directly to the already inflamed surface, much more acute suffering is induced, and in such cases it is usual to combine with the escharotic some anodyne effect. For this purpose morphine has been employed in various proportions; some practitioners, however, (and I confess myself amongst the number) prefer to employ the arsenic on a pledget of wool or lint which has been previously dipped in creosote.—*Mr. Saunders, in the Forceps.*

Med. Gaz., Aug. 1845, *p.* 612.

15.—TREATMENT OF CHOREA.

By Dr. C. J. B. Williams, F.R.S., &c. &c.

With regard to the treatment of chorea in children, it usually yields to purgatives and tonics; if the disease is very recent, purgatives will often succeed in curing the disease; but subsequently, the addition of various tonics is required. Purgatives remove the irritation of the intestinal canal which I have before adverted to, as tending to produce the disease. Derivants are useful, in preventing the local determination of blood, which is connected with most cases of excitement of the nervous centres, but the remedies that answer most effectually in most instances are tonics. I have seen cases cured by quinine, and by bark, but metallic tonics are most effectual. Sulphate of zinc, and sesquioxide of iron, are

* Of course no patient should ever venture to apply this escharotic himself.

the most useful; the former being adapted chiefly to the more plethoric subjects. In children who are active, and who exhibit a tendency to inflammation, without any weakness of constitution, it may be given in doses of ten grains, three times a day, gradually increased. The salts of iron may be given in various forms; the sesquioxide is the favourite remedy; it does no harm, and may be put into the hands of any one. It may be given in doses of one scruple up to half an ounce, two or three times a day. The more effectual tonics are the more soluble ones; the sulphate of iron is a very good one, but the iodide of iron, in my own experience, answers best; it pervades the system more rapidly than any other, and keeps the secretions more free. It may be given in doses of one grain three times a day, increased to four or five grains, taking care at the same time that the bowels are open. In obstinate cases, where there is functional disorder of the spine, and the membranes of the spinal chord, counter irritation by blisters along the costal spine, or tartar emetic ointment, or croton oil, or some other applications of that kind, are useful. In these cases, nitrate of silver has been found of service. If there are any symptoms of fulness, or any local pain or tenderness in the region of the spine, local bloodletting should be practised; and if the disease has originated from rheumatism, it is proper to give colchicum, and iodide of potassium internally, at the same time that counter-irritants are used. There are some other affections closely allied to chorea, and diseases of the motor functions, that may be either functional or structural. To illustrate these, I may mention some experiments made by Magendie and others on animals; on removing the corpora striata of some animals, there was an irresistible tendency to move forward; and the removal of considerable portions of the crura cerebelli caused them to roll over and over. In the latter case the motion was very extraordinary, for it is recorded that the animal continued to roll over and over at the rate of sixty times in a minute, for eight days in succession. There is no doubt that injury done to certain parts of the nervous system, produces an undue development of the motion of particular parts of the body. Structural diseases and functional disorders may incapacitate various parts, and somewhat similar results may ensue. Irregularity of the circulation by pressure, or by congestion, may produce the same effects. This may explain many anomalous cases on record, in which persons in connection with structural disease of the brain, sometimes without any structural disorder, have exhibited rotatory motions; hanging and rolling the head about, and swinging the arms to and fro, and all sorts of absurd and fantastical motions. Hysteria presents a type of all these things, and of every other nervous disease. The subjects affected in these cases are nervous persons, and are observed to be subject to a sort of laughing ague, an infectious disease so to speak, which was prevalent in the north of Scotland for some time, causing people to shake and laugh in a most extraordinary manner. Again Tarantulism, supposed to be excited by a poisonous influence, seems to be very much of the same kind: it is an excited

state of the excito-motory function, under some narcotic influence, in which the patients dance until they fall down perfectly exhausted.
Med. Times, May 24, 1845, *p.* 133.

16.—*On Strychnia in Chorea.*—By A. Ross, M. D.—[Some years since, in consequence of reasoning upon the supposed state of the brain and nervous system in chorea, Dr. Ross was induced to try this remedy in some cases which had resisted other treatment.]

The first occasion on which I made trial of the remedy in this disease (says he) was in the beginning of 1839, in the case of a delicate girl of twelve or thirteen years of age, who came under my care as an hospital patient, with many of the eccentric symptoms of this singular disease most distinctly marked. From having been very expert with her needle, she was grown incapable of using it, and her attempts to thread it were almost ludicrous. I prescribed for her the eighth or tenth of a grain of the alkaloid, to be taken twice a day. On the second or third day of the treatment, through a mistake of the nurse, she had an over-dose of the medicine, which produced more violent effects than I intended—viz., convulsive twitches, which, however, quickly subsided, on the medicine being intermitted, and with them all symptoms of the disease. In a day or two after this I saw her thread a fine needle with a hand perfectly steady, and she was dismissed cured at the end of a week. I saw her more than a year afterwards; she was quite well, much improved in appearance, considerably grown, and had no return of chorea. I ought to mention that she first came under my care after having been already some weeks in the hospital, under the care of my esteemed predecessor, Dr. Bayne, whose treatment of her was continued, without any improvement in her symptoms, until she commenced the use of the strychnia.

My next case was a girl of the same age and constitution, who came under my care as an hospital patient, about the same period. In her case I adopted the same treatment. No violent effects were produced by the remedy, and after a few days' treatment, the symptoms of chorea began gradually to disappear, and she was also discharged cured at the end of a fortnight.

I cannot speak so favourably of the effects of strychnia in some cases of paralysis in which I have considered myself warranted in trying its use, and in which class of diseases, under certain circumstances, its advantages have been favourably recognised by some authors; but in chorea, in the limited number of cases in which I have given it a trial, I have been much satisfied with the result.
Lancet, June 7, 1845, *p.* 636.

17.—TETANUS TREATED BY STIMULANTS.

By Mr. James W. Ilott, Bromley, Kent.

[In Retrospect, vol. XI., p. 22, will be found an interesting article by Mr. Stapleton, on the use of alcohol in a case of Tetanus. The

following case, with the opinions of two or three eminent men in London, will be read with interest.]

The patient, a robust man, aged thirty, was thrown from his chaise, Nov. 28, and met with a compound fracture of the tibia and fibula, with considerable injury to the soft parts. By extension the bones were placed in a good position, and it was determined to save the limb. The patient went on remarkably well till the 12th of December, when tetanic spasms first commenced. Healthy granulations had formed, and were covering the denuded bone. The spasmodic action affected the muscles for a time, and then gave way, the muscles of the jaw being those mostly affected. On the 14th he complained of cramp and spasm in the chest. A blister was applied, and calomel and cathartic medicine administered. 15th. The pain and spasm of the chest were somewhat relieved, but he was very weak. He was ordered brandy and water, and medicine, with ether, every two or three hours, after which he somewhat rallied. He continued much the same to the 18th, when the tetanic symptoms were much increased in severity, and in the evening there was opisthotonos. Mr. John Scott saw him, and agreed in the propriety of continuing the stimulants, and suggested opium enemata, and ol. terebinth. and ol. ricini internally. This treatment was pursued with little variation till the 21st, when he was observed to be extremely low, with a pulse about 40, and in a cold clammy perspiration. The quantity of brandy at this time administered amounted to rather more than three pints in the four-and-twenty hours. Every part of the muscular system seemed affected with spasm. Dec. 22nd. He was much the same, but the wound was looking more healthy. Dr. Wilson saw him, and urged the continuance of the stimulants, but recommended the entire discontinuance of opiates. He also recommended a suppository compound of quinine, sesquicarbonate of ammonia, and camphor, to be administered every three or four hours. From this period he continued to improve, and on the 26th all tetanic symptoms had disappeared. During the eight days at which the disease was at its height, the patient took two gallons of brandy, besides wine, beef-tea, jelly, &c. Jan. 29th, the wound was nearly healed, and he was daily gaining strength.

In a supplement to this communication, Dr. Wilson remarks that the case affords a well-marked instance of traumatic muscle fever, and that the principle on which it was treated was one of unremitting stimulus and support, opium and all other narcotics being entirely laid aside on the 10th day of the attack. The extent and severity of the constitutional disorder were strongly indicated by the indifference of the patient to all the ordinary effects of the alchoholic stimulus. From this case he draws the important pathological inference, that tetanus, like fever, is a disorder of the entire system. Determined specially to the muscles, it is continually operative in the other structures as in the universal blood. Generated after a definite period of incubation, it requires time for its development, time for its cure. On these views and indications that treat-

ment that assumes to be rational must address itself to the general business of nutrition, rather than to the partial agencies of the nerve. Under the great systematic error of the modern pathology, tetanus is encountered almost exclusively by opium and other narcotic poisons. There is no plausible theory to account for the preference of these fatal drugs. By experience they have long been utterly condemned.

[Mr. Davis, however, with many others, is convinced that many cases tetanus from gun-shot wounds have been cured by opium.

Dr. King applied a very powerful opiate liniment in a case which came under his care, but found its sedative effect such that the heart's action was arrested, and the patient sank. He thinks the case would have terminated favourably under the use of stimulants; and if opium is to be given, it should be in combination with remedies of a stimulant character.]

Dr. Snow remarked that the case under discussion differed from most cases of traumatic tetanus, as in this instance the disease came on after long-continued pain and considerable purulent discharge. It occurred more generally soon after injury, and whilst the constitution was not much reduced in strength. It commenced in this case with spasmodic twitches, such as might result from mere debility, and which he had recently seen in a patient reduced by rheumatism. The treatment pursued in the case under debate had been doubtless applicable, and best suited to it; but before we could lay down a law for the treatment of tetanus generally by these means, we must have further experience.

Mr. Blizard Curling considered that the merit of carrying the case to a successful termination was due to Messrs. Scott and Ilott, who had attended entirely to it for the first ten days, up to which period no material alteration had been made in the treatment pursued. It was known that generally, if a case of tetanus could be carried over ten days, the patient usually recovered. He mentioned a case of tetanus occurring in the London Hospital, under Mr. Scott, in which the same treatment as employed in Mr. Ilott's case was successful. In a book which he, Mr. Curling, had published some years since on tetanus, he had given his opinion respecting opium in this disease; that opinion remained unchanged. He had recommended the use of stimulants and nutrition in the disease, because it was of an exhausting character, many patients, he believed, having died from exhaustion.

Mr. Solly had lately had three cases of tetanus under his care, one of which only recovered. This recovery he attributed entirely to the free use of stimulants, which were administered night and day by a careful nurse. He regarded the employment of opium in this disease as injurious.

Dr. Jeaffreson regarded the addendum of Dr. Wilson as forming the main interest of the paper. He agreed with him that we should treat the disease on enlarged and general principles. We could lay down no arbitrary rule. He had seen many cases both of idiopathic

and traumatic tetanus, and had found it treated successfully by a variety of treatment. The indications presented must guide us in our proceeding. Purgatives were called for when there was a general febrile condition; stimulants when there was exhaustion. In some instances neither opium nor stimulants were admissible, but he agreed with Mr. Davies as to the advantages occasionally of large doses of opium.

Medical Gazette, May 2, 1845, *p.* 35.

[Mr. Simon considers tobacco one of the best anti-tetanic remedies we possess. By its use the spasmodic action is relieved, and time is thus gained for stimulation and nutrition.]

18.—*Treatment of Tetanus.*—By C. J. B. Williams, M.D., F.R.S., &c. With regard to the treatment of tetanus,—opium has been given in nervous cases, as much as twenty grains every three hours. In other cases, stupor has ensued if the tetanic spasm had not relaxed. A case is recorded of a patient taking 110 bottles of port wine in forty two days, and he was cured. Cold affusion has been said to have cured a few cases. Blood-letting is not curative, but it appears to be palliative in the acute cases. Hydrocyanic acid, mercury, digitalis, and ammonia have been tried without effect. Dr. Elliotson gave carbonate of iron in enormous quantities successfully. Hamilton and Abernethy have recommended purgatives, and each one recommends his own hobby. Turpentine has been considered one of the most effectual purgatives in this disease; but this, like others, cannot effect a cure. Indeed, very few of the remedies that have been tried have had any effect towards a cure. Looking rationally at the thing, I should attempt to cure idiopathic tetanus on the same principles as rheumatic inflammation, using the strongest counter-irritants, liquor ammoniæ, and calomel and opium in very large doses, with colchicum, my favourite anti-rheumatic remedy. In traumatic tetanus I cannot say much about the expectation of curing this form of the disease, but there are some cases recorded of cures having been effected by Indian hemp.

Medical Times, May 24, 1845, *p.* 134.

19.—*Mitigation of the symptoms in fatal cases of Tetanus.*—When cases of common tetanus are to become fatal, we do not find the paroxysms grow less frequent, but they become apparently milder, and, on the contrary, when the patient is recovering, the intervals between the paroxysms are lengthened, but the violence of the last paroxysm that man may have, may be as great as that of any of the preceding ones. Sometimes on visiting a patient he tells you he is better—he is now able to put two fingers between his teeth, whereas a little while ago he was only able to put one; he *feels* himself better, his jaw can be opened more, and his limbs are more flexible; his friends meet you with a smiling countenance,

and every thing is congratulation—now, what are you to expect? Why, that the next paroxysm the patient gets will carry him off, the very next paroxysm will certainly be the fatal one.—*Professor Colles' Lectures.*

Medical Gazette, Oct. 17, 1845, *p.* 1069.

20.—ON DELIRIUM TREMENS

By C. J. B Williams, M.D., F.R.S., &c.

[Practical men, or such as call themselves so, are frequently found running into errors equally great with those committed by mere theorists, and, if possible, in a more blind and obstinate manner.

Of these, one great error is, that opium is all-sufficient for the cure of delirium tremens: "Give opium," say they, "and you cure the disease. It is so in some—nay, in the majority of cases; but the rule is not so absolute as it is asserted to be.

But in order to rational treatment, a true understanding of the disease to be treated is required. Delirium tremens is usually defined as excitement with exhaustion. Excitement of the nervous system to an extent preventative of sleep, is frequently a leading feature in this disorder.]

Sleep is intended as a means of restoring all the vital powers, and particularly supplying an additional force to the excito-motory power, and the cause of want of sleep is a matter which has not been sufficiently attended to. Many morbid phenomena prove to us that the sensorial functions, the functions connected with the mind, and the voluntary powers, act in some degree as a balance to the functions of the nervous system connected with involuntary power. When the sensorial functions are greatly excited, excited to an excessive degree, the excito-motory functions become comparatively exhausted. On the other hand, where the involuntary excito-motory functions are excessively excited, as in convulsive attacks, the voluntary powers are in abeyance—there is a state of coma, stupor, or something else approaching to it. The two cannot be in a state of continual excitement long together; the continued excitement of both leads to exhaustion of both, or one more than the other; and the great purpose of sleep is not only to refresh and to strengthen the sensorial functions, but for a certain time to suspend them altogether—that is, they are altogether suspended when sleep is perfect—when there is no dreaming. Sleep is designed not only for the purpose of restoring the sensorial powers, but doubtless to give increased temporary energy to the excito-motory powers. And what do we see in a state of tranquil sleep? In tranquil sleep the excito-motory function is that on which the life mainly depends; it is that on which the respiratory movements hang; and were it to fail, sleep would become disturbed in consequence of the person being brought to the verge of asphyxia. I might illustrate this by a great number of cases; for example, cases in which sleep

is imperfect. The whole nervous functions being exhausted, whether from mental excitement or bodily fatigue, or intoxication, what is the result? When a person is over-fatigued, he is too tired to sleep. The excito-motory function is exhausted as well as the other; and hence there is not strength enough to keep the respiratory action in energy sufficient for the comfort of the individual. The consequence is, he soon awakes; the sleep is disturbed; he starts with a feeling of nightmare, or oppression, and has to exert his voluntary muscles to supply by their movements what is wanting in the excito-motory function. This is the reason of imperfect sleep from over exhaustion.

But the excitement of the whole nervous system which exists in delirium tremens is not dependent alone on loss of sleep. In addition to continued irritation by the alcoholic stimulus to which the nervous system has been subjected, another cause generally co-operates in these cases—that is, the absence of a sufficient amount of nutrition. Habitual drunkards are always tippling, but they do not eat; they have no appetite, no powers of digestion; and the consequence is, that whilst they are in a state of continued intoxication, they are in a state of perpetual starvation. Inanition is induced, another cause of the exhaustion of the bodily powers generally, and of excitement of the nervous functions in particular. It is well known that in all cases of inanition the bodily powers are depressed, but the nervous function is the last thus to suffer; it remains excited, in fact, in the midst of a general state of depression, as we see in cases of continued starvation, privation of food, and exhaustion from other causes. In excessive loss of blood, or drains of other kinds which exhaust extremely, we find that the nervous system remains excited even in the midst of weakness. These things have been illustrated by the experiment of Chossat on inanition, which shew that the nervous system in these cases is not only the last to suffer in function, but last also to suffer in structure, and the last to lose weight when animals are starved to death.

Now we know that this cause operates in the case of habitual drunkards; we know that they do not eat, from a want of relish, consequently that they are in a state, with regard to the nutrition of the system, approaching to starvation. This is another reason why exhaustion ensues. This view of the matter introduces us to another peculiarity of delirium tremens, and suggests to us another indication in the treatment in ordinary cases.

The indications of treatment are three-fold. First, to compose that undue excitement of the nervous system which prevails, and which is exhausting the other powers. This is done by opium and other narcotics. Secondly, to support those functions which are failing, and which are already so much exhausted that life may be in jeopardy. Although sleep is needed, yet strength is required to support life, and although sleep be obtained, perhaps the excito-motory function may be exhausted so low, that it may prove the sleep of death—it may be a reduction to a state of sinking. Under such circumstances—and they often occur in extreme cases of exhaustion

in connection with delirium tremens—it becomes a leading indication to support the system by stimulants, and food if possible. But there is a third indication which should never be lost sight of, in the treatment of delirium tremens; that is, to purify the system from the poison that is in it. If it be a case of recent debauch, there is an alcoholic stimulant in the system, and the longer it remains there the more mischief it will do. And in these cases there are other poisons besides the alcoholic stimulant. The body is a source of poison to itself; and if the vital powers are greatly reduced in their energy, the process of self-purification will not go on; the excretory functions are imperfectly performed; the urine is no longer freely secreted; urea, which is a poison in itself, accumulates; the bile probably accumulates in like manner, and the result of this in an extreme degree is to cause a poisoning of the system. It may not operate in such a violent manner as to lead us to say that the system is overwhelmed by the poison, but it contributes to its influence. The cases I have to read will illustrate this point, shewing that as long as the excretions are defective, the nervous excitement continues, or the patient remains in a state of exhaustion, and there is an imperfect peformance of the other functions. It is therefore a leading object to *purify the system by means of an increase of the secretions*, and this is generally done practically by means of purgative and diuretic remedies. This is the systematic treatment of delirium tremens explained in its principles.

Medical Gazette, Oct. 10, 1845, *p.* 1003.

ORGANS OF CIRCULATION.

21.—ON THE PROGNOSIS OF VALVULAR HEART DISEASE.

By O'B. Bellingham, M.D., Physician to St. Vincent's Hospital.

The prognosis in valvular disease depends upon a variety of circumstances—as, for instance, the particular valve engaged, the nature and amount of the lesion, the age of the patient, and the condition of his health, the length of time which the disease has lasted, its rapid or slow progress, the alterations of other parts of the heart, or of other organs with which it is complicated, and the profession, occupation, and habits of the patient. Valvular disease, if not extensive, and if uncomplicated with hypertrophy or dilatation of the ventricles, or congestion of the lungs or other organs, does not, by itself, necessarily shorten or destroy life. Many individuals, whose circumstances removed them from the necessity of active occupation, have lived long, and have died of other affections.

If, however, the disease has advanced so far as to be complicated with dropsy, and if the patient is intemperate, or is obliged to labour for his maintenance, the prognosis is unfavourable, and the disease

will have a fatal termination, sooner in some cases, and later in others.

The most formidable varieties of valvular disease are—a state of considerable contraction of the mitral orifice, and a state of the aortic valves permitting free regurgitation. A contracted state of the aortic orifice is a less dangerous lesion than a contracted state of the mitral orifice; and a state of the left auriculo-ventricular orifice permitting regurgitation, is a less dangerous lesion than a state of the semilunar valves permitting regurgitation; because the impediment or obstruction to the circulation is always greater in the latter than in the former cases. For instance, when the aortic orifice is contracted, the powerful efforts of the ventricle are exerted to overcome the obstacle, and if the degree of contraction increases, the walls of the ventricle become increased in thickness in order to effect this; but when the contraction is seated at the mitral orifice, there being only the feeble force of the left auricle to impel the blood into the left ventricle, which it is quite incapable of doing if the contraction is at all considerable, the *arrière* circulation then becomes overloaded, and congestion of the lungs and of other organs ensues. If, however, contraction of the aortic orifice has led to dilatation instead of hypertrophy of the left ventricle, with thinning of its walls, (which, however, is not common) the impediment to the circulation will be very considerable.

Again, if the semilunar valves of the aorta permit free regurgitation, the left ventricle will be kept in a state of constant overdistension, its cavity may become dilated in consequence, and its walls thinned, by which its power of overcoming the obstacle and discharging its contents will be diminished, and the embarrassment to the circulation considerably increased. Whereas, when the mitral orifice permits regurgitation, the left ventricle is not kept in a state of constant distension, its cavity can be completely emptied, and though the passage backwards of a portion of its contents must tend to embarrass the circulation in some degree, it never does so to the same extent, as occurs in cases of free regurgitation through the aortic orifice. In fact, when the lesion of the mitral orifice is only such as to permit regurgitation, the symptoms are often comparatively mild; we have seen numerous cases where the mitral valve permitted pretty free regurgitation, from which the patient suffered little inconvenience; and provided the muscular tissue of the heart is not diseased, and the patient's condition in life enables him to take the necessary repose, his life may be prolonged to the usual extent. In a case which was under the care of my friend Dr. Fleming some time since, the regurgitation through the left auriculo-ventricular orifice was so free as to permit of the passage backwards into the auricle of nearly one-half the contents of the ventricle at each systole, and yet up to the time of the patient's death merely slight anasarca of the lower extremities was present.

When disease engages two valves at the same time, the prognosis is always, as may be supposed, more unfavourable than where a single valve is engaged. For instance, regurgitant disease of the

mitral valve may exist, as I have said, for a considerable time, without occasioning much embarrassment to the circulation, or much inconvenience to the patient; but if it comes to be complicated with contraction of the aortic orifice, the danger becomes considerable, because, as the ventricle contracts, there is not only the direct impediment to the passage of the blood into the arterial system, but much of it is likewise impelled backwards into the auricle. When mitral regurgitation is combined with regurgitation through the aortic orifice, the circulation is liable also to become greatly embarrassed, and still more so if these valvular lesions are further complicated with hypertrophy or dilatation of the left ventricle.

Considerable contraction of the mitral orifice is, as has been said, one of the worst forms of valvular disease; but if this condition of the mitral orifice is combined with regurgitation through the aortic orifice, the prognosis will be still more unfavourable, because the impediment to the circulation will be greater, and its effects will sooner become evident upon the system. In some cases of this description the patient expires suddenly; in the others he lingers for a longer or shorter time, and dies, worn out with pain and suffering.

The age of the patient exerts some influence upon the rapid or slow progress of valvular disease; in young persons it usually pursues a more rapid course than in old age—hence, the prognosis is more unfavourable here (because the parts have not time to accommodate themselves to their altered condition) than in the cases of old people, in whom valvular disease not unfrequently arises so gradually and slowly, that the patient is unconscious himself of anything being wrong; and unless some acute attack, or some other disease comes to complicate it, it may be unsuspected up to the time of his death. In many instances we know that ossific disease to a considerable extent is found in and about the valves of the aorta in persons advanced in life, where nothing of the kind had been suspected previously.

In addition to the different points already mentioned, the condition of the patient's general health, and the amount of congestion of the lungs, liver, or other organs present, must influence our prognosis in valvular disease. If the general health is broken down or the system in an anœmic state, the prognosis is more unfavourable than under opposite circumstances. If there is much obstruction to the pulmonary circulation, and the lungs have been long in a state of congestion, they are very liable to attacks of inflammation, which will increase the dyspnœa, and aggravate the patient's sufferings. The diseased valves themselves sometimes become the seat of fresh attacks of inflammation, and if the system is in an anœmic or cachectic condition, the patient will be unable to bear the necessary treatment, and the disease will prove more quickly fatal.

If the liver has been long in a congested state, and the portal circulation been long obstructed, congestion of the kidneys and spleen next occurs; eventually, congestion passes into structural alteration, the functions of these organs come to be imperfectly

performed, the urinary secretion becomes more scanty, and fluid is effused into the cavity of the peritoneum. In such cases the prognosis must be always exceedingly unfavourable.

Dublin Medical Press, May 7, 1845, p. 289.

22.—TREATMENT OF HYPERTROPHY OF THE HEART.

By Dr. Bellingham.

[In considering the treatment of hypertrophy of the heart, we must remember that it has been slow of growth, and cannot therefore be quickly removed, and also that we possess no specifics for the disease, and cannot place much reliance on drugs alone for its cure.]

The treatment of hypertrophy must vary somewhat according as the disease is simple or complicated with dilatation of the ventricles, or with valvular or other disease of the heart, according to the age of the patient, the presence or absence of dropsy, &c. It must also vary with the cause which has produced the hypertrophy; indeed, the majority of the cases which we see are the result of an impediment to the passage of the blood out of or through the cavities of the heart, and the increased thickening of the walls of this viscus, is the result of nature's effort to overcome the obstacle. The treatment must also vary according to the stage at which the disease has arrived. Few cases, comparatively speaking, are met with in hospital practice, where the hypertrophy is simple or uncomplicated; patients belonging to this class seldom present themselves or seek for relief, until dropsy or other symptoms supervene, which compel them to discontinue work.

Simple hypertrophy of the ventricles is more amenable to treatment than hypertrophy with dilatation of the ventricles; but it is a form of the disease which we are rarely called upon to treat. Hypertrophy, with dilatation, if advanced, is seldom cured; and if it is still further complicated with valvular disease or adhesion of the pericardium, it is perfectly incurable; because the lesion to which it is consecutive is irremediable. In such cases we can do little more than palliate the symptoms which occasion most distress, and endeavour to avert, as much as possible, a termination which is inevitable.

The objects to be held in view, or the indications of treatment, may be stated in general terms to be as follows:—

1st. To remove the cause which has occasioned the hypertrophy.

2nd. To diminish the action of the heart, and to lessen irritability of this organ.

3rd. To diminish the amount of circulating fluid without enfeebling the heart's action, or producing general debility.

By the two first, repose of the organ is ensured, and it is placed in a favourable position for the hypertrophy to be diminished. By

the latter, the cavities of the heart not being constantly distended, dilatation is less likely to follow.

Hypertrophy of the ventricles is stated to have been successfully treated by following up Valsalva's plan of treating aneurism; both Corvisart and Laennec were advocates of it. This method consisted in repeated venesection, first in large, afterwards in a smaller amount, in limiting the food and drink to a very small quantity, and in keeping the patient constantly in the supine posture. The objects in view were to reduce the inordinate action of the heart, and to diminish the amount of fluid in the circulation to a degree compatible merely with the continuance of life. This is stated to have been carried so far by Valsalva in cases of aneurism, that ultimately the patient was only allowed half a pint of soup in the morning, and a quarter of a pint in the evening, with a very small quantity of a medicated water. When the patient was brought so low that he could not raise himself in bed, the amount of nourishment was gradually increased until his strength was again restored.

Valsalva's method of treatment, however, being founded upon an erroneous theory, is little calculated either to bring about the spontaneous cure of aneurism, or to remove hypertrophy of the ventricles; and those practitioners who have pushed it to any extent in this disease found that it tends to hurry the disease to a fatal termination.

Of late years a modification of this plan (if it can be so called) has been adopted with advantage, which is particularly applicable to cases in which the patient is young and robust, and where the disease is not very much advanced. It consists in moderate local or general bleeding, at considerable intervals; a rather spare regimen—not, however, limited to vegetables—with a small amount of drink; in other words, the diet should be what is called dry—by which the amount of blood in the system will be diminished, but its quality will not be deteriorated; at the same time, perfect quietude of mind and body is to be insisted on, and every thing likely to hurry the circulation, or to occasion mental emotion, is to be strictly avoided. By these means morbid irritability of the heart will be reduced, and the repose of the organ ensured. In following out this plan of treating hypertrophy, however, care should be taken, if we avoid one extreme, not to fall into the other. Cases of hypertrophy, accompanied by dilatation, will admit of a lowering treatment better than those in which this complication exists; indeed in the latter, the diet should never be too spare, or debility will be the result, irritability will be increased, the heart's action hurried, and the patient will be reduced to nearly the same condition as after excessive loss of blood.

As a general rule, venesection is not necessary in the majority of cases of hypertrophy, unless the patient is young and robust, and blood is formed rapidly; even in such cases, if blood-letting is frequently and injudiciously practised, its injurious effects become soon evident, the blood becomes watery and deteriorated, (fibrine diminishing and serum superabounding,) the heart's action becomes

more rapid, a state of anœmia is the result—a condition in which palpitation is a frequent symptom; and the debility which ensues favours the occurrence of serous infiltration into the cellular tissue.

Cases in which dilatation predominates over the hypertrophy, or in which the patient's physical powers are low, bear venesection badly. Here the loss of a small amount of blood will be followed by even more injurious results than the loss of a large quantity when the patient is plethoric and robust; exhaustion will more quickly follow, the feeble action of the ventricles will become still more enfeebled, they will be unable to empty themselves, congestion will ensue, followed by increase of the dilatation, and the general debility which results will soon be attended by dropsy.

Among internal remedies few have been more highly lauded by some practitioners than digitalis. M. Bouillaud terms it the true opium of the heart, and regards it as the most direct and effectual sedative of this organ. He states that he has derived the greatest benefit from the endermic employment of digitalis;—a blister being first applied to the prœcordial region, the raw surface is sprinkled with the powder, in the proportion of from six to fifteen grains, and repeated daily. By this proceeding (according to M. Boillaud) we diminish, as if by magic, the number and the strength of the beats of the heart. On the other hand, Laennec (a most accurate observer) in speaking of digitalis, says—This medicine of late has been much employed in the treatment of diseases of the heart, under the idea that, in addition to its diuretic, it exerts a sedative action upon the heart. I must confess that this action has never to me appeared very evident or very constant, even when the dose has been carried so far as to produce vomiting and vertigo. I have alone remarked, and many other practitioners who have examined the effects of digitalis agree with me, that during the first days of its administration it often increased the number of the pulsations of the heart, and that eventually it seemed sometimes to render the heart's action slower. M. Chomel likewise has little confidence in digiialis. In speaking of its effects in hypertrophy of the ventricles, he observes—In the first place, I must remark, that the specific action of digitalis upon the frequency of the contractions of the heart is not constant; I have employed it in numerous instances without this effect being observed. In many cases of hypertrophy, both at the Hôtel Dieu and La Charité, under the influence of regimen and repose alone, the number of the beats of the heart has come down from 80 to 60, 50, and even 40, within a few days after the patient's admission; and there cannot be a doubt that if digitalis had been employed in these cases, the diminution in the frequency of the pulse would have been referred to it.

For my own part, I cannot say that I have ever derived much benefit in cases of hypertrophy, or of hypertrophy with dilatation of the ventricles, from digitalis, either endermically employed, or given internally; the former, in the trials which I made of it, occasioned so much pain as to do away with any sedative action; and I have never ventured to persevere in the internal administration of digi-

talis, so as to diminish considerably the number of pulsations of the heart for any length of time. In fact, in a chronic disease like hypertrophy, to produce any decided effect, the digitalis should be administered in gradually increased doses, and continued for a long period, which would obviously be a very unsafe practice; and though by this means the hypertrophy might be prevented from increasing, it does not follow that the medicine would have any direct effect in diminishing the thickening of the walls of the ventricles, and after a course of digitalis, provided no unpleasant symptom supervened, we should probably find the hypertrophy in the same condition as when we set out.

As an occasional medicine, and when attacks of palpitation are frequent and severe, the digitalis may be employed with temporary advantage in cases of hypertrophy; and the tincture is to be preferred to either the powder or the infusion. Under such circumstances, it may be combined with sedatives, as the tincture of hyoscyamus, or the aqua lauro-cerasi, or with diffusable stimulants, as æther, subcarbonate of ammonia, camphor, &c.

When congestion of the lungs or liver has followed the hypertrophy, or even in cases where there is no evidence of either, purgatives, occasionally administered, are highly serviceable; and the patient is often himself sensible of the relief which they afford. They prove of use by unloading the portal circulation, and by diminishing the amount of circulating fluid, without debilitating the patient. The best, under such circumstances, is a mercurial purgative at night, followed by a saline cathartic in the morning, with which colchicum may be combined if advisable, and a bitter infusion constitutes a good menstruum.

For the same reason that cathartics are of service in hypertrophy when the disease is advanced, or when it is complicated with dilatation, diuretics will prove still more so, by removing the watery parts of the blood without occasioning even as much debility as cathartics; and when congestion of the venous system has followed, they will assist in postponing the occurrence of anasarca. When dropsy sets in, they are, of course, our principal resource, and the same diuretics may be administered here, and they may be employed in the same manner as has been mentioned in speaking of the treatment of valvular disease.

The preparations of iodine are favourite remedies with many in the treatment of hypertrophy, and the hydriodate of potash has been more frequently employed than any other. It can, however, exert no specific effect upon an hypertrophied heart, and is not, therefore, to be depended upon.

Recently the aconite in small doses has been recommended, owing to its exerting a sedative action on the circulation, and diminishing the strength and frequency of the action of the heart; but as it likewise diminishes the frequency of the respiration, it obviously does not admit of being employed in advanced cases of hypertrophy where more or less impediment to the pulmonary circulation is always present. Moreover, as the action of aconite is somewhat

uncertain, but particularly as it is not a medicine which will bear to be administered for any length of time, or in gradually increased doses, without the risk of unpleasant consequences following, we can hardly expect to derive much benefit from occasional doses in a chronic affection like hypertrophy of the ventricles, where the period of treatment is not limited merely to days or weeks.

Setons or issues in the region of the heart have been freely employed in the treatment of hypertrophy; and by some practitioners considerable benefit is stated to have been derived from them. Undoubtedly they are occasionally useful, but the inconvenience and annoyance which they occasion to the patient appear to counterbalance, in a great measure, the good we can expect to derive from employing them.

The foregoing, indeed any mode of treatment of hypertrophy, will be unavailing, unless (as Dr. Hope observes) *steadily* pursued; and it must be persevered in for one, two, or three years, according to circumstances. "The great majority of recoveries take place between one and two years, but a year or two of subsequent precaution is most desirable to prevent a relapse." Two of the greatest impediments to success (he adds) are—1st. That the patient is often so much relieved at the end of two or three months as to believe himself well; and 2ndly. That other practitioners, finding the heart calm and the respiration free, persuade him that he has not, and never has had, organic disease of the organ.

The latter observation of Dr. Hope is unfortunately too true. Many instances have occurred where a patient, after having been submitted to the treatment necessary for hypertrophy, and having been relieved of all the distressing symptoms, consults some other practitioner, who declares that no disease of the heart exists. Now, as organic disease of this organ is, by the majority of people not belonging to the profession, believed to be incurable, or nearly so, the patient naturally supposes that his complaint had been misunderstood; and all the thanks his former medical attendant will get for his trouble will be to be dismissed, and probably abused upon every favourable opportunity.

Dublin Medical Press, July 30, 1845, *p.* 65.

23.—TREATMENT OF DILATATION OF THE HEART.

By Dr. Bellingham.

As a general rule, the treatment of dilatation is directly the reverse of that of hypertrophy. In the one case, we have evidence of increased nutrition of the heart; in the other, of feeble or diminished nutrition. In the one case, we find a strong heart impelling the blood with increased force through the general arterial system; in the other, we have a feeble heart, unable to propel its contents to any distance, and probably incapable of emptying its cavities.

The objects to be held in view in the treatment of dilatation are—

1stly. To remove the cause which occasioned the dilatation, if that be practicable.

2ndly. To tranquillize the circulation, and relieve the heart of the blood which overloads or oppresses it.

3rdly. To strengthen the parietes of the heart, by which it will be enabled to expel its contents, and the further progress of the dilatation be opposed.

4thly. To diminish or remove the congestion of the lungs, liver, &c. and the other effects of impeded circulation, without debilitating the patient.

If the dilatation is the result of valvular disease, or if it has followed adhesion of the pericardium, the effect of pericarditis, we can do but little more than palliate symptoms; both these pathological conditions being irremediable. On the other hand, if the dilatation is the result of any cause which can be removed; if, for instance, it has followed prolonged muscular exertion, or violent mental emotion,—if it has succeeded to frequent attacks of bronchitis, or occurs in patients debilitated by loss of blood from any cause—if it arises in subjects weakened by previous illness, or comes on in chlorotic and anœmic individuals, much benefit may often be derived from treatment, provided the patient is young, the disease not in an advanced stage, and not complicated with attenuation or softening of the parietes of the organ.

In order to tranquillize the circulation and to relieve the heart of the blood which overloads or oppresses it, this organ must be maintained in as complete a state of repose as possible, which is to be accomplished by rest, by avoiding everything likely to excite or agitate the mind, by regulated diet, and obviating dyspeptic symptoms, which are very common attendants upon this condition of the heart. The food should be nourishing, and but little fluid is to be permitted; at the same time, the secretions are to be maintained in a healthy condition; by these means, the amount of blood will be diminished, while its quality will not be deteriorated. Functional derangement of the stomach is common in cases of dilatation, and nothing under such circumstances is more likely to bring on palpitation and add to the distress of the patient, than a full meal or flatulent food; hence, the food should be such as is easily digested, and should be taken in small quantity at a time; and anything which occasions distension of the stomach or flatulence should be carefully avoided. The medicines calculated to relieve the dyspeptic symptoms will vary, of course, according to circumstances; sometimes antacids, at others acids are indicated; carminatives are occasionally serviceable, and the hydrocyanic acid in minute doses is sometimes given with advantage.

In order to strengthen the parietes of the heart, and to enable it to expel its contents, tonics variously combined are indicated; by improving the general health we give tone to the heart, and thus assist in diminishing or retarding the increase of the dilatation. Everything calculated to debilitate the system is to be avoided;

hence, bleeding, digitalis, and antiphlogistic measures of every description are contraindicated as a general rule. If digitalis is a dangerous remedy in some of the diseases of the heart which we have been considering, it is still more so in dilatation when at all advanced; or if the parietes of the ventricles are attenuated. Here the palpitation is an effort of nature to assist in relieving the heart of the blood which distends its cavity; if we diminish the increased action by administering digitalis, we take away the only safeguard left; the organ can no longer accommodate itself to the amount of blood which it receives, and the death of the patient may be the result.

In order to diminish or remove congestion of the lungs, liver, &c. and the other effects of impeded circulation, the same measures are indicated as have been alluded to in treating of valvular disease; but here we must be very guarded in the use of measures likely to debilitate the patient, and we must trust rather to diuretics, diaphoretics, and expectorants, than to hydragogue cathartics, or local abstraction of blood, which prove so useful in other forms of heart disease. As the extremities are habitually cold, means should be employed to equalize the temperature, and to determine to the surface, by which congestion of internal organs will be likewise relieved.

In conclusion, it must be borne in mind, that dilatation is a chronic affection, which, in its early stage, and when moderate, produces little inconvenience. and hardly requires treatment, but which, when advanced, is little under the influence of internal remedies; any improvement, consequently, must be slow and gradual, and in many cases we can do but little more than palliate symptoms; consequently, the success of our treatment will depend in a great measure upon the patient observing carefully the rules laid down for him; if he lives intemperately, or is obliged to labour for his bread, the disease will run a more rapid course. But "if (as Mr. Burns observes) the patient keeps quiet, submits to a regular light, and digestible diet, and employs occasionally remedies to relieve the dyspeptic symptoms,it will afford him comfort to know that he may may ward off the fatal issue for a considerable length of time, and even enjoy tolerable health."

Dublin Medical Press, Sept. 17, 1845, *p.* 178.

24.—RUPTURE OF THE SUPERFICIAL FIBRES OF THE HEART.

By David Maclagan, M.D., F.R.S.E.

A lady, seventy-five years of age, while seated with her family at about half-past two P. M., on Monday, February 10th, was observed to become suddenly pale, and, (after feebly expressing that she was sick,) before assistance could be given, fell from her chair on the floor in a fit or faint, described to have been of a slightly convulsive character. She was with some difficulty conveyed to bed, in her clothes, by the females of the family. I saw her there

in about a quarter of an hour from the period of seizure; and found her with pale sharpened features, and cold pulseless extremities. She was now, however, quite collected, and spoke with a low, but quite articulate, and even tolerably hale voice. She stated in answer to my enquiries, that she had no pain, but a sense of weight, tightness, and uneasiness over the chest. External appliances of heat, and internal stimuli, were immediately and assiduously administered. She swallowed without difficulty, though latterly with disinclination, and there was no restoration of the pulse, or of the natural temperature of the extremities. She continued apparently without pain, but in a state of restlessness and occasional jactitation, and expired in about an hour from the time of seizure. The breathing throughout, with the exception of fitful intervals of hurried respiration, though feeble, was, until towards the close of life, nearly natural. About half an hour previous to her death, her clothes had been so far loosened and removed as to enable me to ascertain a considerable extent of dulness over the precordial region, but not its exact limits, and though on applying my ear I thought I heard and felt a slight impulse of the heart, it was so obscure as not to be depended on.

Though watching with much interest the symptoms of the case, and strongly impressed with its probable affinity to that of our lamented friend, Dr. Abercrombie, I need hardly apologize for the scantiness and imperfection of my observations. The practitioner can appreciate the circumstances in which a medical man is placed, in the midst of an anxious family, constant in enquiry, watching his every movement and expression, and hoping even against hope, that something may be done to save the object of their affections.

This lady had throughout life enjoyed a remarkable share of good health, was active to the last in the discharge of domestic duties, and in taking regular exercise in the open air. With the exception of occasional derangement of the digestive functions, which demanded only the mildest remedies, she had rarely required medical aid. She had never complained of difficulty of breathing or inability for exertion, except that limitation of power and of facility in ascending heights or steeps common even to healthy persons of a less advanced age, particularly where, as in her case, increased corpulence accompanies it.

The body was examined forty-six hours after death, by my son, Dr. Douglas Maclagan, in my presence, and that of one of his pupils. The general appearance was that of a healthy person suddenly deprived of life, and of an apparently less advanced age than that which the individual had actually attained.

Previously to opening the cavities of the chest and abdomen, it was ascertained, that precordial dulness extended from the centre of the sternum to the left mamma, as far upwards as the fourth rib, and as low as the xyphoid cartilage.

On opening the cavities of the chest and abdomen, the tegumentary coverings were found loaded with fat. The contained vis-

cera exhibited a very healthy appearance. On exposing the pericardium,—the state of which, and of the contained heart, was the first and main object of enquiry,—the pericardium was immediately seen and felt to be much distended, and that apparently with fluid; on opening it, about eight ounces of fluid blood, and four of coagulated, were removed.

On further examination, the source of the blood was found to be two small lacerations of the substance of the heart itself. One of these was about four lines in length, in a direction nearly corresponding with the greatest length of the organ. It was situated on the anterior aspect of the left ventricle, close to the septum cordis, and about an inch and a half above the apex of the heart. The smaller laceration was situated a little higher up on the heart,—was very shallow, and seemed little more than a rent or fissure of the investing serous membrane. Close to the septum there were also one or two ecchymotic spots on the surface of the heart, apparently as if blood were effused under the serous covering, without any laceration of the textures. On examining more minutely the larger rent, it was found by Mr. Henry Goodsir, Conservator of the Museum of the College of Surgeons of Edinburgh, that a bristle inserted into it, passed into one of the coronary veins, and there seems no reason to doubt that the rupture of this vessel, and probably of some of the smaller arteries, was the cause of the hemorrhage. The bristle was not found ever to pass into the interior of the ventricle, but no further attempt was then made to ascertain this with the probe, from fear of making an artificial opening. When, however, the heart had been hardened by being kept for some time in spirits, its cavity was opened and carefully inspected by Mr. John Goodsir, Demonstrator of Anatomy in the University. Some coagulated blood and fibrinous matter were found adhering to the interior of the ventricle, but on removing these carefully by washing and other gentle means, the endocardiac membrane was exposed, and not the least appearance of laceration could be detected. It was clear, therefore, that this was not a case of rupture of the heart, in the ordinary acceptation of the term, but merely a laceration of some of its superficial fibres. Though the symptoms in this case were such as usually accompany hemorrhage, it is obvious, from the quantity found, that death was not owing to the mere loss of blood, but rather to the mechanical obstruction which the effused blood opposed to the heart's action. The chief differences between this case and that of the late Dr. Abercrombie seem to have been the less rapid escape of blood into the pericardium, and the rupture being on the anterior surface of the ventricle.

The heart in this case was above the normal size, but was proportionally large in all its parts, and though more than naturally loaded with fat, there was no appearance of hypertrophy or other organic disease; unless there may have been some degree of softening of the heart's substance, from chronic inflammation, which not unfrequently occurs in old age, and with which the adhesion of the fibrinous mass to the interior of the ventricle may have had some connexion.

[Such cases as this, with one or two exceptions, seem to have been rarely observed or recorded by pathologists. Those which bear the greatest analogy to it are described by Cruveilhier. under the head of apoplexy of the heart, and which he considers a form of spontaneous hemorrhage. Dr. Cormack also alludes to similar cases.]

Lon. and Edin. Monthly Journal of Medical Science, June, 1845, *p.* 421.

25.—ON A SYPTOLIC MURMUR IN THE PULMONARY ARTERY AND ITS APPLICATION TO DIAGNOSIS.

By E. L. Ormerod, Esq.

[In this paper Mr, Ormerod endeavours to establish the existence of a murmur in the pulmonary artery in certain cases, and then draws some inferences respecting the nature of such cases.]

A murmur was presumed to have its seat in this artery when it could be traced from the left edge of the sternum in a line from the third intercostal space, or a little higher, towards the middle of the left clavicle for about two or two and a half inches.

[The nature of the disease during which the murmur appears, seems generally divided into two classes, viz. Anæmia, and acute rheumatism.]

It appears that a murmur in the pulmonary artery may, in an enormous majority of cases, be considered independent of organic disease; and further, that it is *possible* that the cause producing a murmur in the pulmonary artery may be identical with that producing a murmur in the aorta. It is generally admitted, as far as concerns adults, that murmurs are producible in the direct ratio of the attenuation of the blood, and such attenuation is known to attend acute rheumatism, depletion, and the use of mercury, as well as chlorosis. So there is at least a possible cause of a murmur in operation in these cases. All this, however, is to be viewed with great suspicion, when we remember the frequency with which the valves of the heart really are affected in acute rheumatism, and consider that there may be an anæmic murmur in the pulmonary artery at the same time as an organic one in the aorta.

[Dr. Williams remarked that the existence of an accurate mode of diagnosis between pulmonary and aortic valvular murmurs was assumed as certain in this paper. As this mode of diagnosis had chiefly originated with himself, he wished to state how far his extended experience led him to dissent from the conclusions drawn by the author. Dr. W. then states,]

If a murmur with the first sound be heard at mid-sternum, and along the upper part of the sternum, and also in the arteries of the neck, it undoubtedly must be an obstructive aortic murmur, no matter whether loudest at the left margin of the sternum or at the

right; for in different cases it may be heard in each situation according to variable circumstances in the position of the heart, the density of the overlapping lungs, and other matters. But because aortic murmurs often have these completely distinct characters, it did not follow that they should always have them, or that a murmur heard at mid-sternum, and not in the arteries of the neck, must be a pulmonic murmur. When an aortic murmur was weak, it might be heard at mid-sternum, yet not be loud enough to reach the arteries of the neck, but when made louder by any thing exciting the actions of the heart, then it was heard in the neck, and showed its aortic origin. This was commonly the case in anæmia, in which the loose ill-filled state of the arteries made them bad conductors of sound, and this he suspected would apply to most of the cases described by Mr. Ormerod as those of pulmonary murmurs: that they are to be heard over the valve, and in a line of two and a half inches upwards, and to the left, he, Dr. W. could find neither anatomical nor clinical reason for assenting to. He did not, however, deny the possibility of diagnosticating pulmonary murmurs, but it must be on other grounds, which he would specify. If a murmur were heard at mid-sternum, and not below the left breast, or at the top of the sternum, or in the neck, where, nevertheless, the natural double sound of the heart was still heard, that murmur might be judged to be pulmonary. Such a sign he had met with but rarely in cases of heart disease—not perhaps in more than six cases—and this corresponded with the infrequency of pulmonic valvular lesions as found after death. But he had heard it in connection with lung disease, sometimes with a bellows sound, diffused at the root of the lung. In all common cases mid-sternum murmurs had their seat in the aortic valves, and unless Mr. Ormerod could bring further evidence that his were not of this description, he (Dr. W.) would not admit even the grounds of his argument.

Medical Gazette, June 6, 1845, p. 256.

26.—*State of the Heart in Old Age.*—The state of the heart and large vessels in old people has been investigated by M. Neucourt, of the Salpetrière, who has carefully examined the circulating organs of twenty-eight females, from sixty to ninety years of age, who had not presented during life any evidence of cardiac disease. From these too limited materials he concludes, that the size of the organ rather increases than diminishes with age—a fact before demonstrated by the admirable researches of M. Bizot. The orifices are larger than in the adult, and ossifications limited to the aorta entail no irregularity of circulation, nor when uncomplicated, is their presence, he says, revealed by any physical signs. Valvular murmurs are in general not of the same importance as in earlier life, and are often present without any evident disturbance of the heart's functions.

Dr. Cowan's Address, Prov. Medical Trans., No. 1, N S., 1845, p. 83.

27.—*Dropsy from Rheumatic Heart-disease cured by Elaterium.*—By James Turnbull, M.D.—[A woman, aged thirty-eight, consulted Dr. Turnbull for cough and dyspnœa, with swelling of the face and legs. She had had an attack of rheumatism a few months before, since which she has had shortness of breath, and some slight palpitation. In the report of the case, Dr. T. says,]

The pulse is 70, rather weak and small; impulse slightly increased; the first sound is heard over the lower part of the sternum, and is accompanied by a bellows-murmur, which is most distinct at the apex and towards the left side, but is also audible at the lower part of the sternum, and slightly at the base of the heart; there is a very evident pulsation in the veins of the neck on both sides; the pulsation is double; the first precedes the pulse at the wrist, the second bears to the first a relation which may be compared to that between the first and second sounds of the heart. On applying the stethoscope over the internal jugular vein, two very peculiar sounds are heard, which seem to be caused by the interruption, at each pulsation, of the venous murmur, which would otherwise be continuous, for on pressing the vein higher up with the finger, the sounds are entirely prevented.

Diagnosis.—Insufficiency of the mitral and tricuspid valves.—Slight hypertrophy, with dilatation.—℞. Elaterium, one-sixth of a grain; chloride of mercury, two grains; bitartrate of potass, one drachm; compound jalap powder, two scruples. Make a powder, to be taken once or twice a day. ℞ Compound camphor tincture, two ounces; oxymel of squills, two ounces; tincture of digitalis, two drachms. A teaspoonful of the mixture to be taken when the cough is troublesome.

[The powders produced a full effect, purging and vomiting freely, and the swelling diminished considerably. Digitalis and iodide of potassium were then ordered in a diuretic mixture, by which all œdema was removed, and the frequency of the pulse diminished. The cough left her, and she was only liable to palpitation on great exertion.]

The rheumatic attack, which here laid the foundation of valvular affection of the heart, caused the disease in the most insidious manner; and it shews, therefore, the importance of examining the heart with the stethoscope in all cases of acute rheumatism. The existence of a bellows-murmur in the first sound, with its maximum of intensity at the apex, indicated mitral regurgitation; and it is probable, from the strength of the impulse, and the loudness of the first sound at the lower part of the sternum, that this had produced dilatation and hypertrophy of the cavities at the right side of the heart. The insufficiency of the tricuspid valve, indicated by the jugular pulsation, may have been occasioned by such dilatation, or it may have been caused, in common with the mitral affection, by the rheumatic inflammation. The interruption of the venous murmur by the reflux of the blood in the veins, is worthy of notice. It is the first case in which I have observed this.

The case further shows the beneficial effects which, in many instances, result from elaterium in combination with other hydragogue cathartics, and with diuretics, and their power in thus, for a time, at least, removing the symptoms of the disease. It is probable, however, that this patient will be subject to winter cough, and that, if severe, a return of dropsical effusion will occur.

Lancet, Aug. 2, 1845, *p.* 125.

28.—*Fat in the Coagulum of an Obliterated Vein.*—By Dr. Julius Vögel.—(Contributed by Mr. W. S. Kirkes.)—A woman died with a medullary fungus of the uterus and of the inguinal glands of the right side. The medullary mass, which was very much softened, was made up of the usual cells, with drops and granules of fat intermixed. The right femoral vein was obliterated. On laying it open it appeared completely filled with a coagulum, which in some parts was of a deep blackish-red colour, in others of a greyish-white tint. At some places this coagulum was quite loose in the vein, at others it was firmly adherent to the internal coat of the vessel, and was continued uninterruptedly into every lateral branch of the vein. Where the coagulum was loosely connected with the inner coat of the vein, and towards the middle of the vessel, it appeared under the microscope as an amorphous fibrinous clot entangling blood-corpuscles within it; but on its peripheral surface, even to the naked eye, it presented the appearance of well-formed layers applied one upon the other, so as to constitute a kind of false membrane, which readily admitted of being separated into strata; the last or outermost of these strata was firmly connected to the internal coat of the vein, which latter was here and there reddened by ecchymosis. In this portion of the coagulum the microscope distinctly showed commencing organization, consisting in part of primary cells about to be transformed into fibro-cellular tissue, and in part of fully formed fasciculi of fibro-cellular tissue. Moreover, at circumscribed spots, both in the membranous layers, as also in the amorphous coagulum, there were deposited some yellowish, crumbling, cheesy-looking masses, readily distinguishable by the naked eye, and which on a microscopic examination exactly resembled aggregated drops of fat.

Medical Gazette, May 2, 1845, *p.* 5.

ORGANS OF RESPIRATION.

29.—ON THE FREQUENCY OF TUBERCLES IN DIFFERENT ORGANS.

The following results, obtained by M. Cless, of Stutgard, from the examination of upwards of 160 bodies affected with tubercular disease, are interesting as shewing the comparative frequency with

which different organs and parts become the seat of tubercular deposit; they are also especially valuable when taken in conjunction with the observations of M. Louis, Barthez, Rilliet, and others, most of which they confirm by additional evidence.

In 152 autopsies of adults affected with tubercles, M. Cless found the lungs free from tubercles six times. In two of these six cases the peritoneum was sprinkled with tubercular granulations; in one the pulmonary and costal pleuræ of the right side were affected; in one the bronchial glands, mesentery, and lower part of the ileum, were the seat of the tubercular disease. In the 5th case the two pleuræ and the peritoneum were sprinkled over with tubercles of various sizes, from millet-seeds to peas, densely packed together; there was also tuberculous matter in the glands of the neck and chest, liver and spleen; the lungs, compressed by effusion into the pleural cavities, were perfectly free from tubercles. In the 6th case there was tuberculous matter in the bronchial glands. In 21 autopsies of children, he only found the lungs free from tubercles once; this was in a boy eleven years of age, who, besides a considerable serous effusion into the ventricles of the brain, had two large masses of tubercle in the cerebellum, many small ones on the surface of the liver, and caries of the vertebræ.

In 146 adults affected with tubercles in the lungs, there were only 35 in whom the disease was confined exclusively to the lungs; in the remaining 111, or nearly three-fourths of the whole, the disease had extended to other organs. In children, the proportion in which the deposit of tubercles is limited to the lungs is smaller than in adults, M. Cless finding only three cases out of twenty in which all other organs were free. Barthez and Rilliet state the proportion to be 23 to 269. In 166 cases (adults and children) of tubercular deposit in the lungs, there were only thirteen in which the disease was confined to one lung; of these in ten cases it was the right lung, in three the left: it is true that in the greater number of cases the disease had not advanced very far. When both lungs were affected, the right was usually the most diseased, the proportion being 45 to 30; this result is not in accordance with the observations of Louis and others. In 146 adults, in whom the lungs were diseased, vomicæ were found 105 times, there being none in the other 41 cases; in children, the proportion in which vomicæ existed was smaller, there being only nine cases out of twenty in which they were found; usually, the younger the child is the less frequent is the occurrence of vomicæ; the very young ones most commonly sink under an acute tuberculization which causes death before passing on to suppuration; moreover, young children are frequently carried off by other diseases superadded to the tubercular deposit, such as acute hydrocephalus, &c. Out of 166 cases, pneumothorax, from rupture of a vomica, was noted as occurring four times, twice in the right lung, twice in the left. M. Cless relates two exceptions to the established rule that the usual seat of tubercles is at the summit of the lungs; in these two cases the disease affected the lower lobe especially, and in one there even existed a vomica.

Tubercles in bronchial glands.—M. Cless never found the bronchial glands in children affected with tubercular deposit without the existence of tubercles in the lungs also. These glands were not always examined in adults.

Pleura.—In 13 adults and 1 child there were tubercles in the pleura. In 1 the pleura alone was strewed over with plates of tuberculous matter, the parenchyma of the lungs being healthy; in another case, in which the lungs were equally healthy, there were tubercles in the pleura, peritoneum, and bronchial glands. In three other cases the pleura and peritoneum were covered with tubercles, and there was a small quantity in the lungs. Three times tubercles of the pleura accompanied an ordinary pulmonary phthisis; and six times the tuberculization was general. The patients, of whom 11 were males, and 2 females, had the following ages: 6 were between 20 and 30, 5 between 30 and 40, 1 at 42, 1 at 59, and 1 child aged 10.

Peritoneum.—In 16 adults and 4 children, the tubercles were limited to the peritoneum eight times; they predominated over those in the lungs six times, and in six other cases the disease was general. The four children were between six months and 10 years of age. Among the adults, 11 were males and 5 females; 2 were under 20 years of age, 5 were between 20 and 29, 5 between 30 and 39, 2 between 40 and 49, and 2 between 50 and 59. The tubercles were in no part so numerous as in the peritoneum, the whole surface of which was sometimes covered with them; and, according to M. Cless, they frequently offer, in this part, a peculiarity which is not found in the tubercles deposited in other parts of the body, that is, a black areola surrounding their base, probably from the existence of a black material in the capillary vessels. Once only did M. Cless find the mesenteric glands affected with tubercles coincidently with their occurrence in the peritoneum.

Pericardium.—In one individual only, whose lungs, pleura, bronchial glands, and spleen, contained tubercles, were there found any in the pericardium: and in this case they were scattered over its whole surface.

Intestines.—In 152 adults affected with tubercles, the small intestines were affected 83 times, and the large intestine 37 times; and in 21 children the small intestines were affected seven times, the large ones only once. Never were there found tubercles in the intestines without there being some also in other organs. Between the ages of 20 and 30, the intestines were most frequently found diseased.

Mesenteric glands.—Among 152 adults, 32 had tubercles in the mesenteric glands; 7 out of 21 children also had the mesenteric glands affected with tubercles. In all the cases tubercles were found in other organs.

Liver.—Once in an adult, twice in children; other organs were affected.

Spleen.—4 adults and 12 children; always with tubercles in other parts of the body. In children, the parenchyma of the spleen is often quite invaded by tubercles.

Kidneys.—4 adults and 3 children.

Uterus, fallopian tubes, and ovaries.—In 26 women who died of pulmonary phthisis, tubercles were found in the genital organs; once in the walls of the uterus, once in the peritoneal covering, twice on the internal surface of the uterus, once the whole substance of the uterus was converted into tuberculous matter, twice the ovaries were the seat of tubercle, and four times the fallopian tubes were filled with tubercular substance. The tubercles in the genital organs were always secondary to the general tuberculization, especially occurring where the abdominal viscera were the seat of disease.

Brain and its membranes.—Of 5 children aged from 8 months to 11 years, in whom the membranes of the brain presented tubercles, 4 died of acute hydrocephalus. In all there were tubercles in the lungs and other organs also. The tubercular granulations had always their seat on the external surface of the arachnoid, between this membrane and the pia mater, never within the cavity of the arachnoid. In an adult who died of acute hydrocephalus, there were found, besides a large quantity of limpid serum in the ventricles, pus and many tubercular granulations between the arachnoid and pia mater, tubercles in the lungs and pleura, and in Peyer's glands. In 27 children who died from tubercles, four had tubercles in the brain, as also in other organs; M. Cless never found any in the brain of adults. Besides in the mesenteric and bronchial glands, M. Cless found tubercles in the glands of the neck in five adults and one child; he has also found them in the pelvic and other lymphatic glands; but in all cases tubercles were found in other organs also. Twice he found tubercles in the muscles, six times in bones, and once in an articulation alone.

Medical Gazette, July 4, 1845, *p.* 407.

30.—RESEARCHES ON THE CARBONACEOUS DEPOSITS WHICH TAKE PLACE IN THE LUNGS.

By M. Nathalis Guillot.

[The modifications which occur in tuberculous lungs, when a carbonaceous deposit takes place, are important. Before considering them we will remark on the results obtained by M. Guillot, in 1838, on the pulmonary circulation in tuberculous patients.]

Around all tubercles, there forms in the tissues a zone of variable thickness, in which it is impossible to perceive, either by insufflation from the bronchi, or by injection of the pulmonary arteries, or veins, any of the extreme divisions of the ærial canals, or of the blood-vessels. After the lapse of a certain time, vessels of a new

formation are developed in this zone—vessels which inosculate, on one side, with the vessels originating in the divisions of the bronchial arteries, and on the other, by means of numerous adhesions of the pleuræ, and by false membranes, with the subclavian, intercostal, mammary, diaphragmatic, and mediastinal arteries, &c. These vessels then receive the red arterial blood of the great circulation, and transmit it into the pulmonary veins, with which they also communicate. This new circulation of phthisical persons places the patients, at every epoch of the affection—but more especially when the lesions increase and multiply—in a condition totally opposed to that in which they are when the lungs remain healthy. In a healthy man, each inspiration places the venous blood which comes from the right cavities of the heart in contact with the atmosphere. In the portions of the lungs which are tuberculized, on the contrary, it is the arterial blood, propelled by the left cavities of the heart, which is driven into the tissue that surrounds the tubercles, and which, in the caverns, comes in contact with the oxygen introduced into the lungs by each inspiration.

[The number of tuberculous patients who arrive at old age is much greater than is generally believed. M. Guillot says, that four-fifths of the old men whom he has examined present incontestible traces of former tuberculous disease.

The deposit of carbonaceous matter which takes place in the lungs of the aged, exerts an important influence over the arrest of the tuberculous development. Round modified tubercles and caverns, M. Guillot has constantly found in the aged a deposit of carbonaceous matter. This appears intimately connected with the cure of tubercular formations, using that term merely as synonymous with an arrest of the disease; for the tuberculized pulmonary tissue never can return to a normal state. This carbonaceous matter may be disseminated or accumulated in masses. It is in the centre of these masses that evidence of tubercular disease is principally to be sought for.]

When tubercles are very near each other, all circulation appears to be arrested in the tissue which separates them, a circumstance which explains the remarkable fact of no carbonaceous deposit taking place in the pulmonary tissue thus situated. The carbon is deposited only in the tissue which surrounds the aggregation of tubercles, the circulation of which has not been thus modified.

[Caverns in the lungs of the aged are not always tubercular; they may be the result of acute or chronic pneumonia.]

The influence which the deposit of carbonaceous particles in the lungs of tubercular persons exercises in arresting the progress of the disease, is explained by the anatomical researches of M. Guillot. He has found that the abnormal circulation which is established in the course of time, as we have seen, around tubercular formations, is in its turn obliterated by the carbon; so that the tubercles being cut off from communication with the pulmonary circulation, normal

or abnormal, cease to increase, and gradually assume the characters which we have described. Thus it is that tubercular persons may live to a very advanced age, and only present to the observer, after death, the traces of an affection, the progress of which has been arrested by nature. The tubercles, or caverns, are then found to be completely isolated by the carbonaceous deposit, all the vessels which surround them, those of recent formation as well as those of the natural pulmonary tissue, being completely obliterated.

[Phthisis with melanosis is very well described by Bayle. It is frequently of long duration, and for a long time presents no alarming symptoms. There is slight cough, with expectoration of white sputa. When the disease is simple, there is scarcely any pain in the chest; some even do not feel the slightest uneasiness; they only say that their cough prevents their sleeping. In a later stage there is extreme marasmus, and much expectoration, though there appears but slight indisposition. Some die soon after serious symptoms appear. Patients labouring under this affection are generally above sixty, thin, pale, and present great muscular weakness. The sputa may amount to nearly a pint in the twenty-four hours. They may be mixed with blood, or pure blood even may be expectorated. When this is the case, M. Guillot has generally found the lungs loaded with carbonaceous matter. When hæmoptysis occurs, it is often a sign of the impending end of the patient.]

Percussion, with some patients, give results in perfect accordance with the extent of the disease. The thorax is dull, or there is complete absence of sound in all the regions where the carbonaceous deposit has taken place. These deposits are generally most considerable in the upper lobes of the lungs, and it is likewise there that the diminution in the natural sonoriety of the thorax is the most frequently found, and also the most marked. On auscultating these patients, bronchial respiration is heard both during inspiration and expiration. At first, M. Guillot thought it was owing to dilatation of the bronchi, but he became afterwards convinced that it was merely the result of the presence of the carbonaceous deposit. The more extensive the deposit, the more marked is the bronchial character of the respiration, as also the dulness on percussion. The respiration, however, is never as bronchial as in pneumonia, owing, no doubt, to the weakness of the respiration in the aged who are thus affected. Bronchophony may exist, but it is generally appreciated with difficulty, owing to the extreme weakness of the patient. Cavernous râle and pectoriloquy are also heard when there are caverns connected with bronchial tubes.

Lancet, July 5, 1845, *p.* 6.

31.—ON MINER'S PHTHISIS.

By A. Makellar, Esq., M.D.,

[It is well known that, besides the diseases to which we are all liable, miners are, from their occupation, peculiarly subject to affec-

tions of the respiratory and circulating organs. From a very instructive paper by Dr. Makellar on a peculiar form of lung disease, which may be termed BLACK PHTHISIS, we extract as follows; premising that it is caused by small particles of coal inhaled, accumulating in the lungs, and giving rise to irritation, and finally ulceration. It is thus closely analagous to the "grinder's disease," "mason's disease," &c., which commit such fearful havoc amongst certain of the operative classes, and have all a common origin.]

The rise and progress of the malady may be thus sketched: A robust young man, engaged as a miner, after being for a short time so occupied, becomes affected with cough, inky expectoration, rapidly decreasing pulse, and general exhaustion. In the course of a few years, he sinks under the disease; and, on examination of the chest after death, the lungs are found excavated, and several of the cavities filled with a solid or fluid carbonaceous matter.

[Dr. M's. remarks are upon the disease as it appears amongst the colliers in the Lothians, but we believe that they will apply to those at or near Newcastle, and doubtless to others generally.

In the district above named, the ventilation of the mines is, on account of their immunity from explosive gas, very much neglected. Hence a large accumulation of carbonic acid and other pernicious gases. After working some time in these ill-ventilated places, the lungs inspire more of the impure air, in order to make up for the deficiency of oxygen; and every now and then a deep and sustained inspiration is taken, during which the floating particles are drawn in. When the mine becomes so impure as to be actually unable to support a light, the men are necessitated to leave it, until by the gradual accumulation of purer air, it again becomes capable of supporting respiration and combustion.]

It is now known, that this disease originates in two principal causes, viz., *First*, The inhalation of lamp smoke with the carbonic acid gas generated in the pit, and that expired from the lungs; *Second*, Carbon, and the carburetted gases which float in the heated air after the ever-recurring explosions of gunpowder, which the occurrence of trap dykes renders necessary.

[It was long supposed that the change in colour of the lungs was a form of melanosis, a systemic disease, properly so called. It has been lately proved however, that the black colour is not from any change in the system, but is produced by the infiltration of particles of coal, and chemical analysis confirms the fact. The minute bronchial ramifications are first filled, and the disorganization gradually extends until the whole lobe is infiltrated, softening going on in the meanwhile, from the irritation produced by the foreign substance.]

In the first stage of the affection, there is an incessant dry cough, particularly at night, and all the prominent symptoms of bronchitis are present. Indeed, from the time a man becomes a coal-digger,

and inhales this noxious air, there is ever after a manifest irritation in the lining membrane of the respiratory passages, which is apparent before carbon in any quantity can be supposed to be lodged in the lungs. The mucous membrane of the air passages, by its continually pouring out a viscid fluid, has the power of removing any foreign matter that may be lodged in them. Now, should this membrane, owing to previous irritation, lose to a certain degree this secretory power, then the foreign body adheres to it, and is retained, and this, I think, constitutes the preparatory stage of black deposit. In tracing the progress of the disease, it is my belief, that immediately after the carbon is established in the air-cells, the absorbents become actively engaged, and the glandular structure soon partakes of the foreign substance. One of the peculiar features, as we shall find, when we come to describe cases, is, that the secretory function is ever after so changed in its character, that the gland which formerly secreted mucus, to lubricate the passages, now performs the same service with muco-carbon, and continues to do so during the remainder of the patient's life—even, as I have often seen, long after he has desisted from the occupation of a coal-miner. In fact, it constitutes a striking peculiarity of this disease, that when the carbon is once conveyed into the cellular tissue of the lung, that organ commences the formation of carbon, thus increasing the amount originally deposited.

[Dr. M. believes that the carbon is contained in considerable quantity in the blood, and the evidence he adduces seems to bear out his opinion.

That it is contained in the lungs no one who has seen the working in these pits can doubt. An interesting question in connection with the subject is,

Does the carbon increase in the pulmonary tissues after the collier has relinquished the occupation of a miner, and when there can be no further inhalation, and if so, whence comes this increase? It must be admitted, judging from several of the cases which I have seen, that it does considerably augment. From this remarkable fact, does it not appear probable, that when carbon is once lodged in the pulmonary structure by inhalation, there is created by it a disposing affinity for the carbon in the blood, by which there is caused an increase in the deposit of carbon, without any more being inhaled.

Lon. and Edin. Monthly Journal of Med. Science, Sept. 1845, *p.* 645.

[Dr. Brockmann, of Clausthal, is of opinion that the melanotic matter, though proved by analysis to consist in part of carbonaceous matter introduced as an extraneous body, is yet for the most part an organic pigment deposit. He gives many reasons for his opinion, but some of the facts he adduces, as that there is no irritation of the lungs at any period of the disease, &c., prove that it is not altogether the same as that described by Dr. Makellar, though closely allied. This is what we might expect, as Dr. Brockmann has

studied it in silver and lead mines chiefly, Dr. Makellar in coal mines, where there can be no doubt of its true origin.

This pulmonary melanosis of miners may be considered a salutary effort of nature to deposit the carbon in a particular organ and thus to free the system, and this effect it has to a great extent, so long as the lung is capable of receiving the deposit. Dr. B. mentions a curious fact amongst the causes, that he has never found it in a fair person, and that the darker the individual, or the more carbon contained in the organism, the greater the predisposition.

Dr. Brockmann considers that, with all our improvements, it is scarcely possible to prevent the constant occurrence of the disease, though in this we would beg to differ from him. Amongst other prophylactic indications, are of course removal to a pure atmosphere, and avoiding spirits, and other predisposing causes.]

The first indication of *cure*, is change of work, and a lengthened sojourn in pure air. The following indications should also be attended to.—To add oxygen artificially to the hyper-carbonised blood; To remove the overplus of carbon in the blood, either directly or indirectly. In regard to the former of these, I have never ventured on the direct application of oxygen to the lungs, because these organs have generally been in an irritable condition, and have contented myself with recommending the free use of pure atmospheric air, and bathing. I have also endeavoured to increase its amount therapeutically, by the exhibition of oxydised preparations of iron, which I have found most beneficial in this complaint; nor has their use been followed by any bad effects, as frequently happens in other diseases of the lungs. I endeavoured to accomplish the second indication, chiefly by alkalies, especially the carbonate of soda, but the results were by no means satisfactory. Small doses of calomel had no better effect. It appeared, however, to act beneficially when combined with jalap, especially in the first stage of the disease.

The treatment is modified according to the different stages, as follows:—In the first, although the physician is seldom consulted, I recommend, besides the already mentioned hygienic measures, especially warm or cold baths, according as they are borne, and, under certain circumstances, an emetic, and a purge of calomel or jalap. In the second, the same treatment on a more extensive scale; and, in addition, carbonate of soda, and other alkaline remedies, but more especially the Extract. aloes. aquos; Rhubarb, Cort. Rhamni. Frangulæ, (especially extolled); and in summer, the use, four times a-week, of the artificial Carlsbad water, in so far as the strength of the patient permits. In the third, I have seen the most astonishing effects from the continuous use of warm baths, and the artificial Carlsbad water, and after the cure, and the continued use of one of the above-named extracts, chosen according to the individual peculiarity of the case, I have frequently, after a time, had the felicity to see before me a renovated man. Preparations of iron are often here of the most decided service. Bleeding, and the so-called ex-

pectorants, on the other hand, are never of the least use. Derivative measures are only useful in relieving the rheumatic pains of the chest. The severe fits of coughing sometimes also require palliative measures. In the last stage, nothing can be done, but by mild restoratives, and a strict attention to diet, to endeavour somewhat to prolong life, and strengthen digestion by bitters. At this period iron is especially useful, particularly the Ferrum Iodatum. The Tinct. Ferri pomat. and the Tinct. Nervin. Bestusch., are also of signal benefit, and prolong life for a considerable period. The painful symptoms at this period, often require numerous remedies, and the daily use of opium or morphia. Anasarca generally disappears speedily under digitalis, squill, and other diuretics, which act by producing smart diarrhœa. When structural change of the lungs occurs along with the melanosis, little relief can be afforded. All that can be done, is to alleviate some of the more distressing sympathetic sufferings; the dyspnœa, however, continues most obstinate, and slowly destroys the patient.—*Hannoverische Annalen*, as quoted in *Neumeister's Repertorium* for December 1844.

Ibid, Sept. 1845, *p.* 699.

33.—ON THE CAUSES AND TREATMENT OF PHTHISIS.

By J. H. Tosswell, Esq., Torquay.

Neither climate, food, or natural conformation, must be regarded as the proximate and exciting cause of tuberculous deposit; they only act as predisposing causes. Many occupations have, however, a proximate and exciting effect in the production of results analogous to those arising from the deposition of insoluble matter in the delicate organisation of the lungs. Such are the occupations of dry-grinders, stone-sawyers, &c.

It has been already remarked, that climate is a powerful agent in modifying the functions of the organs engaged in the production of animal heat, by means (in conjunction with improper food) of stimulating one organ at the expense of another; but other circumstances produce *immediately* this condition of function, which, by climate, is induced by its long-continued action. These conditions are especially the result of *natural conformation*, or that peculiarity of organisation which may be said to be congenital, and which, in the majority of instances, is recognised as hereditary; thus we daily observe individuals in this country, where oxygen must be taken into the lungs in considerable quantity, in order to support a due amount of animal heat, with an organic conformation adapted only for the mildest climates. Individuals of this class will, therefore, be placed in circumstances closely resembling those of the Indian who emigrates to a northern latitude, and who rapidly falls a victim to tubercular consumption. Such persons may be said to be *misplaced* as regards the locality they inhabit. Born with an organisation suitable for the tropics, they are placed in an atmosphere of

condensed oxygen; their occupations perchance are laborious, and they are compelled to consume much food to furnish carbon for the production of animal heat; the lungs become taxed with an amount of function beyond their ability; congestion, an ever-present cause of irritation, follows; incipient inflammatory action supervenes; tuberculous matter perhaps is deposited. The irritation continuing, the inflammatory action likewise persists, and fresh matter is deposited around the primary nucleus. These bodies serve as additional irritants to the neighbouring parts; they inflame and secrete purulent matter, which, infiltrating the substance of the tubercle, cause its softening; finally, death puts an end to the unequal struggle between an organisation unfitted for its amount of function, and the causes imperatively demanding the full performance of it. Small lungs, congenital or hereditary, are one of the most frequent of the predisposing causes of consumption, and, under any circumstances, where a great amount of animal heat must be generated, or laborious exertions engaged in, the fact of being originally formed with lungs of inadequate dimensions, when placed in a position favouring the deposition of insoluble matter in the system, predisposes the individual to consumption. Suppose, for the sake of illustration, a person capable of taking into the lungs forty cubic inches of air at each inspiration, whilst another can only inhale twenty, without the aid of external circumstances, such as increased clothing, additional protection, &c. If the two individuals have to generate the same amount of animal heat, in order to resist an equal loss of caloric, it follows that, with the lungs of inferior capacity, one man will have to perform double the number of respirations to oxydise the same amount of carbon; and with lungs only *half* the size, the amount of function will be *twice* as great, acting upon an organ only half as capable of enduring such function; and if, in addition to deficiency of capacity in the respiratory organs, we add a diminution of the capillary changes arising from a deficiency of blood-globules, and a disordered and congested state of the liver, we shall have these as additional causes predisposing to disease.

It is also evident that disease in one organ, out of many concerned in effecting the same end, must be attended with deranged function of all; thus, in the exanthemata, the functions of the skin being interfered with, there is an unvarying tendency to congestion and inflammatory condition of the lungs, the latter organs being compelled to an increased amount of function in order to compensate for the deranged condition of that of the cutaneous surface. In fevers, likewise, the capillary changes being especially altered, a constant disposition to visceral affections accompanies the disease—the result of capillary disturbance.

Any cause which naturally or artificially produces a condition of small capacity of the pulmonary organs, in a climate where a considerable amount of animal heat is required to be generated, must act as a cause inducing a modification in the organs engaged in the production of it. It matters not whether this arise from the hereditary formation, or be induced by such circumstances as tight lac-

ing, whereby the lower portions of the lungs, by compression, being rendered inactive and inefficient, the upper is compelled to perform the entire function; or whether, as a result of disease, by which a part of the lung may be rendered incapable of effecting those changes necessary for the evolution of heat, exacting from the sound structure an amount of function in equal ratio. In every instance the capacity of the organs so circumstanced is rendered unequal to the amount of function demanded. This capacity for organic results, it is however evident, may be relative as well as positive, arising from the condition of other organs engaged in the fulfilment of the same intentions. If the skin or capillaries, singly or combined, be inactive, a more considerable extent of function devolves upon the lungs—an extent, it may be, too considerable for an organ otherwise equal to the amount of function required. Again, if the liver be indolent and disordered, sufficient exercise must be taken to disintegrate organic tissue, to furnish an adequate supply of carbon to combine with the oxygen carried by the blood globules. Supposing, furthermore, the skin and capillaries imperfectly to co-operate, the liver will be called into increased activity, and so long as it can eliminate carbon in sufficient quantity for combustion in the lungs, these organs (the lungs) will not suffer *directly* from a deficiency of that principle necessary to combine with the oxygen they inspire, but the liver itself will eventually become disordered by increased function if the causes in action be not removed. Lastly, if the liver and capillaries combined perform their amount of function inadequately to the demand for carbon in the lungs, the source of animal heat (carbon) will be cut off; the blood containing but few globules can oxydise but little of the metamorphosed tissue; this disintegrated matter not being secreted by the liver in the shape of bile, the lungs will either contain an insufficient supply of carbon to resist the loss of caloric, or they will have the whole function of supporting the animal temperature devolving upon their individual energies; the oxygen, which at each inspiration enters the air-cells, combining with and consuming the carbo npresented to it in the course of the circulation in an imperfect and unprepared state. Such condition will prove a source of irritation to the lungs, and a cause of the effects consequent upon irritation; one organ having individually to perform the amount of function which should devolve upon many, increased motion of the pulmonary organs will occur, with increased waste and metamorphosis of the pulmonary tissue—whilst a deficient amount of nutrition will at the same time exist, the result of which will be local hyperæmia and a predisposition to tuberculous deposit, provided the immediate cause exist in the system.

Treatment of Consumption.—In deciding upon the character of treatment which should be adopted in cases of phthisis, the arguments which have been adduced in the progress of these papers should be *isolated*, and made the basis of it. These facts are, that—

1. Lime is the *exciting* cause of tubercle, arising from its abundant introduction into the circulation by the food we take; or from

its deposition in an insoluble condition, from a deficiency of phosphoric acid in the system.

2. That climate, food, occupation, habits, and natural conformation are the *predisposing* causes.

3. That the predisposing causes act by setting up irritation and increased local function in the lungs.

4. That increased amount of function supposes increased motion in the organ producing it; that increased motion is attended with an increase of waste, and that an increase of waste requires an increase of nutrition.

5. That the food taken should be of a description calculated to support *two* purposes; first, the demands of nutrition—secondly, the requirements of respiration.

6. That in order to diminish the amount of function in one organ, engaged co-operatively with others in the performance of the same function, it is essential to withdraw the predisposing cause which has excited its activity, and to endeavour to increase the functions of the co-operating organs.

7. That the amount of capillary function gradually *diminishes* in consumption, by reason of the gradual disappearance of the globules of the blood; and that in order to supply carbon to the lungs, that of the liver must *increase*.

8. That animal heat is generated chiefly *in the capillaries* when the capillary changes can be properly effected, but that it is generated *in the lungs* when the liver has to prepare the carbon for combustion.

9. That exaltation of function arises from an increased demand for the results of such function; this condition requires an increased supply of blood, and hyperæmia supervenes.

Medical Times, Sept. 6, 1845, *p.* 448.

31.—ON THE EFFECTS OF HUMID AIR ON PHTHISIS.

By E. B. Sheriffs, Esq., Professor of Anatomy in King's College, Aberdeen, &c.

[The opinions that pulmonary consumption is caused by a moist atmosphere, and that patients so afflicted have the fairest chance of recovery when removed to a dry spot, is, almost without exception, universal, both amongst professional and unprofessional persons. In order to overturn such a long-standing, deeply-rooted, *error*, if so it be, strong and incontrovertible facts are needed. Mr. Sheriffs has certainly adduced some very striking circumstances in favour of his views, which we think deserve the most careful and attentive examination by medical men. He writes,]

Dr. Harrison in "An Address delivered to the Medical Society of Horncastle, on the Endemic Causes of Disease," has offered some valuable remarks on the subject here treated of. He says, "I had not resided long in this division of Lincolnshire, before I was strongly impressed with an idea that the inhabitants upon the wolds were a

great deal exposed to idiopathic consumptions, and peculiarly liable to calculous complaints. In the division of Holland, and the extensive marshes of our county, these disorders are probably less known than in most other situations in England. Multiplied experience and numerous inquiries have tended to confirm these opinions." Again, he observes, "The situation of this town has afforded me numerous opportunities to investigate more particularly pulmonary complaints, and I can truly assert that *they are much less frequent in the fens and marshes than in the upper parts of my circuit.* The difference with respect to idiopathic consumption is very great indeed. In some parts where I practise, it is a very common complaint, and in others it is scarcely known to the faculty. Pulmonary consumptions are certainly to be met with every where; but when I have been consulted upon such cases in our marshes or the division of Holland, I could either trace them to other situations, to neglected cold, or some irregularity in the suffering person."

Mr. Weekes, of Hurstperpoint, in Sussex, has asserted, that in his neighbourhood consumption became more frequent as draining was extended. So long back as the year 1779, the learned Dr. Wells found out that consumptive patients in Flanders removed to the marshy parts of the country for relief, a circumstance that attracted his attention and elicited much valuable information from this gifted physician.

Dr. Speer, of Dublin, has remarked that, "how far humidity, accompanied with severe cold or heat, contributes to the production of disease or health, is as yet a point not clearly settled; the latter would with us seem rather to be the case. Dr. Rutty thought our moist seasons the healthiest, at least much freer from epidemics, and his various observations go decidedly to confirm this opinion; this has also been the opinion of other observers since his time, who think that, unless with great variations of temperature, severe cold, and easterly winds, our humid seasons are in general our healthiest, A single proof of this seems to have been furnished in the year 1816, which was remarkably healthy and remarkably wet. Dr. Franklin, and Dr. Percival of Manchester, conceived that moist seasons are healthier than dry ones, *cæteris paribus*—Sir John Pringle seems to have been of a similar opinion. It is only, therefore, in its combination with extremes and varieties of temperature, &c. that we can consider humidity as a promoter of disease, and even here we know not how far to go."

It is evident from the statement of Dr. Speer that so far from humidity tending to induce consumption, it is favourable to health —a circumstance which, in my opinion, does not admit of doubt.

Mr. Thackrah, in a most interesting work, gives a mass of information on the effects of humidity. He observes, that "whether we examine the agency of moisture on men in the open air, or those under cover, we find it much less than common opinion would expect. In this country almost all our maladies are ascribed to the agency of wet, or to 'taking cold.' Medical men adopt this notion. It is consequently heard in their expressions; it constantly appears in their

writings. The people, of course, have gradually adopted the medical doctrine, and carry it even further than its founders. A reference, however," continues he, "to the history of cases attributed to wet and cold, and an examination of the reasoning of the patients, are enough to expose the insufficiency of the evidence and the incorrectness of the inference."

Some years ago I entertained myself by perusing Madden's Travels, and find among my notes an extract bearing on the present subject. In vol. i. p. 221, commences the following passage:—"Indeed Alexandria at all times is excessively damp; the atmosphere is saturated with a saline vapour, which condenses on the walls and furniture of the houses, in small crystals of nitre, muriate of soda, and muriate of ammonia; the soil is everywhere coated with the saline particles, and although it is quite impossible to keep any articles made of iron free from rust, yet the constant breathing of this saline atmosphere does not appear to be prejudicial to health. *Diseases of the lungs are unknown. I have not seen one case of pulmonary consumption among the Arabs.*"

Medical Times, Aug. 2, 1845, *p.* 345.

35.—FURTHER REMARKS ON THE USE OF NAPHTHA IN PHTHISIS.

Dr. Hastings ascribes the failure of those medical men who have been less successful than himself in the treatment of phthisis by naphtha, to one or all of the following causes.

First. From a deleterious agent being employed for a medicinal one.

Second. From its use in cases where it was contraindicated.

Third. From patients being treated in unfavourable situations.

He proceeds to say, that cases are continually occurring in which oily, milky, and coal-tar naphtha are administered, and most prejudicial results ensue. The preparation recommended by Dr. Hastings is the *pyroacetic spirit*, which is obtained by the destructive distillation of an acetate generally of lead or lime, and in its natural form is scarcely distinguished from pyroxylic spirit. Its chemical properties are, however, more spirituous, its density being nearly equal to that of alcohol, and it contains more oxygen than the former. (?) The author's test was its colourless and transparent character, and its agreeable ethereal alcoholic odour; its specific gravity, which is 0·823 to 0·824; (when pure ·792?) its increase of temperature consequent upon admixture with water; its preservation of appearance on the addition of nitric acid; and its taste being warm, without the least sensation of burning. Dr. Ure has recently suggested an easy method of effecting this object, which is founded on the following facts. If nitric acid of specific gravity 1·45 be added to pyroxylic spirit, the mixture assumes a red colour, but no effervescence takes place. If the same acid be added to pyro-acetic spirit, there will be no change of colour, but an effervescence will

slowly be formed, accompanied with an elevation of temperature, and copious evolution of gas, resembling in appearance the action resulting from the mixture of alcohol with nitric acid, but with an acetic instead of an ethereal odour. Pyro-acetic spirit may also be generally distinguished from pyroxylic spirit, by its causing no appearance of milkiness on mixing with water, in the state in which it is met with in commerce (p. 154). Dr. Hocken states that "the most ready test is to be found in litmus paper, which is reddened by the non-medicinal, but is unaffected by the medicinal compound."

In stating the cases in which he recommends the use of naphtha, Dr. Hastings observes, that the less phthisis is complicated with other affections, the more suitable it is for this treatment, where the pulse is at the ordinary standard, or thereabouts, where the hectic is slight, laryngeal and peritoneal disease absent, the functions of the stomach and bowels not much impaired, the constitutional disturbance inconsiderable, and the physical signs denoting only a slight deposit of tubercles in one lung,—the prognosis is favourable, and a speedy recovery may be anticipated. In many cases this mild character of the disease is never witnessed, however early they may be seen; at the same time, for want of close observance, this period frequently altogether escapes notice; hence success often depends upon an early diagnosis of disease. If naphtha is employed in acute phthisis, where the cough is very harrassing, with slight frothy expectoration, respirations thirty to forty per minute, pulse a hundred and twenty to a hundred and forty, hot skin, profuse night sweats, great thirst, appetite deficient, or altogether wanting, and the physical signs denoting an extensive crop of tubercles in both lungs, it will be found injurious rather than beneficial. If it be employed in chronic phthisis, co-existing with disease in other organs, its value is diminished in proportion to the extent of the complications and their vitiating influence on the constitutional powers; if it be continued in certain cases where improvement had followed its use, after the appearance of intercurrent pneumonia, bronchitis, or pleurisy, it would do great mischief. Many such cases give way to a short course of treatment with antimony, digitalis, &c., and then the pyro-acetic spirit may be again employed with the greatest advantage. (pp. 118—19.) Where hæmoptysis is present, or where it has recently existed, naphtha is generally contra-indicated. When complicated with dyspepsia, little or no benefit will accrue from its use until that affection is removed. The author has also found that the disease is not amenable to this plan of treatment when the patients are in crowded hospitals, or in other situations where the atmosphere is impure.

The *dose* in which the author appears generally to administer the naphtha is from ten to twenty drops in a small quantity of water three times a day.

From a Review of Dr. Hastings' Work in Med. Gaz., Aug. 29, 1845, *p.* 783.

36.—*On the treatment of Incipient Phthisis.*—By Dr. Graves, of Dublin.—[The following remarks are made by Dr. Graves, in an obscure case of pulmonary disease, subsequent to an attack of fever, and are applicable to numerous cases in general practice. This fever soon subsided under ordinary treatment, but a troublesome and increasing cough was left behind, which began to keep the patient awake at night. This raised suspicion, and an accurate stethoscopic examination was made of the chest, when on the right side, below the clavicle, respiration was found feeble, and mixed with crepital and bronchial râles. There was nothing to point out whether this was an unexpected deposition of tubercles, or mere bronchitis, with effusion; and therefore the safe side was taken, and the patient treated as if the former were the case.]

I immediately ordered leeches to be applied under the clavicle, to be repeated as the exigency of the case might require, and prescribed the hydrocyanic acid in the form recommended by M. Magendie.—He recommends a drachm of the cyanuret of potash to be dissolved in an ounce of distilled water. This solution is stated by him to be equal in efficacy, and capable of producing all the advantageous effects of hydrocyanic acid, at the same time that it is less volatile, less liable to undergo change, and can be always prescribed of the same strength. He says that it possesses all the beneficial properties of hydrocyanic acid, in relieving the irritative cough of phthisis, or the excitement which accompanies gastric derangement. Of this solution I ordered the patient to take one drop in half an ounce of water every fourth hour, to be increased in the course of three or four days to double the quantity. On making an examination this morning, I find that his symptoms are improved; there is less dulness on percussion, respiration is clearer, and the crepitus is diminished. On the whole, his condition authorises us to entertain hopes of being able to bring about a cure. If phthisis be curable, or if tubercular deposition admit of being resolved, it is only at the very commencement of the disease, and before that state of constitution is established in which there is a tendency to the formation of tubercular productions. If we happen to be so fortunate as to detect phthisis at this early period, I think that it is possible for us not only to palliate, but also to remove it. By free and repeated leeching, the use of blisters, a mild diet, and the insertion of one or two setons over the part dull on percussion, we shall often be able to remove any threatening symptoms, and perhaps save the patient's life.

Medical Times, Aug. 2, 1845, *p.* 341.

37.—*Recovery from an advanced stage of Phthisis.*—[Dr. Williams relates the following remarkable case of recovery from phthisis in an advanced stage, simply by change of air and scene.]

A gentleman came to me this morning who two years ago was to all appearance in the last stage of consumption. I did not think that he could live a month. There were signs of a considerable cavity in one

lung, and of disease in the other. He had formerly had hæmoptysis, and latterly purulent expectoration, emaciation progressively advancing, and a cough of some twelve months' duration at that time. He had been under my eye during that period, and before he became worse there had been some considerable improvement: when two years ago there was a sudden return of all the bad symptoms, originating in an inflammation excited by cold, and in a few weeks he was apparently brought to the last stage. He was anxious to go out of town; I could scarcely have urged such a measure, so little hope had I of his amendment, but I consented to it, and he was taken to the Undercliff of the Isle of Wight. He had not been there more than two or three weeks before he rapidly improved, and to all outward appearance he progressively recovered—never losing, however, the physical signs of disease in the chest. He is now in tolerable health. His breathing is very good, and he can walk a distance of five or six miles without difficulty. On examining the chest, I found a vast diminution of the physical signs of disease. The dulness on percussion which extended over the greater part of the right lung is much diminished, but there are the remains of a cavity, and some remnant of dulness on the other side. Such a case does occur every now and then, but one must look upon it as an exception to the general rule.

Medical Gazette, Aug. 15, 1845, *p.* 659.

38.—*Case of Pseudo-Phthisis.*—Reported by Dr. Lloyd.—[M. F. æt. thirty-one, married; has had two attacks of chronic cough, with considerable expectoration and night-sweats. A fortnight before admission into hospital, after exposure to damp and cold, she was attacked by shivering, &c., followed by sneezing, cough, and pain in the side. After a violent fit of coughing, she brought up about half a pint of florid blood; the next day more, but of a darker colour, and so on the following day; "making, on the whole, nearly a quart of blood. Soon after the expectoration of blood had stopped, she was troubled with a very offensive taste in her mouth, and a fœtor of a peculiar putrescent character, accompanied by an expectoration of black particles of coagulated blood."

Her symptoms on admission were fœtor from the mouth; troublesome cough; copious, very offensive expectoration; "very considerable dulness over the left apex anteriorly from the second to the sixth rib. Tubular respiration and pectoriloquy at apex. Respiration puerile on the opposite side.. Posteriorly, the left lung is dull, with tubular respiration at apex, and mucous crepitation at inferior angle of scapula. Bowels confined; nails of the fingers hooked."

She was under treatment a month; and at the end of this time she was improved so much as to be allowed to go out.

The great interest of this case consists in its resemblance to one of tubercular disorganization of the left lung.]

The explanation (for which I believe that we are chiefly indebted to the recent investigations of my colleague, Dr. Addison,) appears

to be this: that we may have a cavity, and consequently its physical signs, in either of the following ways:—1. Pleuro-pneumonia, giving rise to pleuritic adhesions, and, at the same time, to induration of a portion of lung traversed by a bronchial tube of some size, the lining membrane of which is generally more or less inflamed, and often distended by its own secretion; the contraction of this indurated lung, the surface of which is fixed to the walls of the chest, aided by the distension first named, giving rise to enormous dilatation of the tube. 2. From pneumonic induration softening down into a vomica. 3. From a vomica formed by the softening of a mass of tuberculated lung. Now it is only when the disease is of this last class that it is necessarily fatal, and the very circumstance of the diagnosis between these different forms of cavity being extremely difficult, ought to make us very careful how we pronounce a case to be one of tubercular phthisis, solely upon the grounds of our discovering the stethoscopic signs of cavity. The last class is, unfortunately, by far the most frequent, and either of the former *may* be fatal; still, as in the case before us, we may sometimes entertain a reasonable hope of a favourable issue; and here I was induced to express such a hope to my class, upon the grounds of the right lung being apparently healthy; the patient having been exposed to circumstances likely to induce pneumonia, and there being no symptoms, stethoscopic or constitutional, which might not be accounted for upon the hypothesis of the existence of pneumonia complicated with tubercles. The very fœtid expectoration I have more than once witnessed in cases of broncho-pneumonia of an asthmatic character, but which have been subsequently recovered from. Although, therefore, it indicates very formidable disease, that disease is not necessarily fatal. The treatment which was here pursued was of the simplest kind, the object being to allay irritation and contract the circulation, and at the same time to support the strength of the patient. Quinine was once tried, but appeared to stimulate too much. The combination of acid with a small quantity of digitalis was truly beneficial. Some months after this patient left the hospital I saw him in good health and flesh, but still presenting the signs of a *dry* pulmonary cavity.

Medical Gazette, May 23, 1845, *p.* 159.

39.—*Microscopical Anatomy of Tubercle.*—In a communication on the above subject, M. Rochoux reproaches those who have made microscopical researches in pathological anatomy, with having examined the morbid tissues at too advanced a stage, when their degeneration had modified the characteristic features of the disease. Avoiding this source of error, he arrived at novel results. If, for instance, a tubercle in its incipient state is placed under the microscope, it presents the form of a rounded, globular, badly circumscribed production, of a diameter of 0·15 to 0·20 of a millimetre; it is lost, as it were, in the midst of sound pulmonary tissue. In this state, it is impossible to isolate it, or extract it, without tearing numerous filaments, the remains of pulmonary tissue, of vessels and nerves,

which form around it a kind of *tomentum*. Its colour, which at a later period becomes of a dull, greyish white, is then that of a gelatine, with a rosy tinge, the more marked the smaller the tubercle. If, after cutting it in two, the surface of the section is examined with a magnifying power of forty or fifty only, the morbid tissue appears homogeneous, as jelly or gum about to solidify; but under a magnifying power of five or six hundred diameters, it offers a very different aspect. We then perceive that it is formed by the interweaving of filaments nearly as small as those of cellular tissue, and containing no visible fluid in their interstices. The mode of texture is regular enough, and recals to a certain degree that of the crystalline lens. The incised surface presents a very pale-reddish colour, with a metallic reflection.

Lancet, July 19, 1845, *p.* 63.

40.—*Pathology of Phthisis.*—From an able but anonymous article, published in the Medical Times, of the 30th of March, on the pathology of phthisis, we extract the following summary of the writer's views, believing them to express the prevalent modern opinion of the disease. If the inflammation, he says, be of a scrofulous, asthenic character, or the nutrition of low vitality, the nucleated particles, or exudation of corpuscles as they are termed when the product of inflammatory effusion, may not have the force of transforming themselves into complete pus globules and fibre, or of acquiring the vital organizing force of the tissues. Under these circumstances, the exuded fibrinous matter loses its power of evolving fresh organic germs; the primitive cells themselves, having no formative force, tend only to degenerate; their nuclei disappear; the body of the corpuscle gets broken up and destroyed, and the whole becomes a confused granular mass—*tubercle*. Tubercular development may thus be regarded as caused by a degraded condition of the plastic material, exuded as a consequence of modified forms of inflammation or of nutrition, and by a deficiency in the assimilating power of the tissues.

This view of the subject is interesting, as it serves to demonstrate, that different processes giving rise, when fully established, to very different products, may, when both are impressed by a morbid agency, produce similar morbid results. We can also conceive, how tubercle may follow a local deterioration, without the general cachexia. An organ may be lowered in its vital power from accidental causes, and its nutritive action be perverted, while on the other hand, the general health may undergo an analogous deterioration, and a temporary consumption be the result. We shall not, however, attempt to speculate any farther upon what we still feel to be a *terra incognita*—a region full of darkness and apparent contradictions.

Dr. Cowan's Address, Prov Trans, No. 1. *N. S.*, 1845, *p.* 68.

41.—*On the treatment of Idiopathic Emphysema.*—By Dr. Mitchell, Dublin Lying-in Hospital.—[The subject of the case was a

girl of two years and a half. She had previously had good health; when suddenly emphysema occurred, after slight sickness and feverishness. Her state when seen is thus described,—]

The entire of the upper part of the body is swollen, so much so, as to give the appearance of excessive obesity. The thorax, arms, neck, face, and head, appear to be four times as large as natural. The slightest touch gives her much pain. The left eye is completely closed by the effusion into the cellular membrane. There is no crepitus whatever perceptible, nor any pitting on pressure, the entire of the skin appearing to be distended to its utmost limits. The lips are livid; the breathing greatly oppressed, in fact being mere gaspings, and countless in frequency; the skin is very hot and dry; bowels confined; urine suppressed since Tuesday; pulse small, thready, and quick, and felt with difficulty, owing to the swollen state of the arm.

Ordered—Hyd. Submur gr. vi., Pulv. Scillæ gr. vi., Pulv. Digitalis gr. i., in ch. vi. sumat. i. 2nd. Horis. App. Emp. Vesicat inter scapulas.

[A consultation was held as to the propriety of puncturing, but it was decided to wait until the effect of bleeding was seen. Four ounces were accordingly taken from a vein in the foot, it being impossible to find one in the arm. The breathing was thereby much relieved, and the swelling much reduced; the pulse could be felt, and the bowels and kidneys acted well. The after treatment was simple; an expectorant mixture, and camphor liniment to promote absorption, and afterwards slight aperients with the use of warm baths, soon completed the cure.

This case is remarkable from its coming on without apparent exciting cause, the child having never had measles, scarlatina, or any affection of the chest; nor was there any typhoid state, in which such occurrence sometimes happens.]

William Hunter states he observed an emphysematous state all over the body in cattle which had the distemper. It may be asked then, if the disease in question be not produced by accident, by violent expiratory efforts, (and you are all familiar with the form of emphysema produced during the violent expulsive efforts during labour), nor from decomposition, from what does it proceed? I answer, from secretion. On this question the words of Dr. Townsend are so very apposite, that I shall not hesitate in making use of them. He says, (speaking of this morbid secretion), "That collections of air are sometimes found in the living body under circumstances where there is no appearance of their being generated by fermentation or putrefaction, and that both in man and other animals, certain tissues possess the power of secreting gas, as for instance, the swimming bladder in fish, the mucous membrane of the stomach and intestines in man, &c."

Dr. Baillie has recorded a very curious case in an adult, bearing a strong resemblance to the above, in which the emphysema was very extensive, and in which no disease or lesion near the lungs

could account for it. And Frank mentions several cases from the effects of secretion, but the patients had more or less previous disease; but I am not aware of there being any case on record of the disease in question appearing in so young a subject. Some of you, I dare say, remember the case of Smith, in No. 3 Ward, in whom the quantity of air secreted in the bladder was enormous, accompanied by so much irritation of the mucous membrane as to prevent her retaining her urine for more than two or three minutes, except under the influence of large doses of opium, when she could retain it for upwards of half an hour. And I need only mention the recent case of the woman Doherty, from Baldoyle, in No. 2 Ward, to bring to your recollection the enormous quantities of air which were secreted in the uterus, to prove that secretion of air from these mucous-lined cavities is by no means so rare, and that we need only look at home for many interesting facts illustrative of this secretion. If, therefore, there cannot be a doubt of the power of these membranes to secrete air, it is not, I think, too much to allow, that a similar power may be possessed by the skint and that the air thus secreted, then escaped into the subcutaneous cellular tissue. A very interesting field for inquiry is thus opened to us, and one which I do not think we have sufficient information on, I allude to the little knowledge we possess of the chemical composition of the gases thus secreted, and also of the circumstances necessary to excite the skin to this morbid secretion. I ought not to omit to mention to you, that Dr. Edwards has devoted a good deal of his time and no little talent to investigating the nature of the secretion of air from the stomach and intestines, but I am not aware of his having met with an opportunity of testing the qualities of air secreted under circumstances similar to the above. His experiments, however, prove, that nitrogen and carbonic acid are secreted by the stomach and intestines in variable quantities.

Dublin Hospital Gazette, July 15, 1845, *p.* 161.

42.—*Remarks on Pneumonia.*—By GEORGE BURROWS, M.D.—[Dr. Burrows, in a clinical lecture on pneumonia, makes the following remarks on cerebral oppression occuring in its course.]

When symptoms of nervous excitement, or cerebral oppression, occur in the course of pneumonia, they are always of very unfavourable import. Pneumonia will sometimes set in with oppressive head-ache, which occasions the patient so much distress that attention may be quite withdrawn from the pulmonary disease until it has made serious advances. It is well known how often an insidious pneumonia goes on in typhus fever, and is overlooked in consequence of the more striking symptoms of cerebral disturbance. Nervous excitement, or actual delirium, may, however, come on in the course of pneumonia, and they are always alarming symptoms. There are two conditions which are likely to excite such symptoms; first, where the disease is over-treated, as in the case just related, and secondly, where pneumonia has run on to its third stage, viz.

grey softening, or purulent infiltration. The disorganization of the pulmonary tissue is often indicated by the occurrence of delirium.

[He then draws attention to a form of pneumonia which is frequently overlooked, but which adds most seriously to the dangers of rheumatic fever, and often greatly protracts convalescence in that disorder.]

Rheumatic pneumonia is characterised by some peculiarities, to which I will now briefly allude. It is seldom ushered in by much thoracic pain, dyspnœa, or cough; and still more rarely is it accompanied with the sputa so characteristic of genuine inflammation of the pulmonary parenchyma. The pains endured by the rheumatic patient in his great joints distract his attention from pulmonary distress, if there be any; and his helpless state aggravated to one of great torture by movements of the body in bed, almost prohibits the employment of auscultation. Hence, the disease often proceeds for some days without being detected, just as a similar complication in typhus fever is frequently overlooked; the cardial murmurs, however, remaining.

Fortunately for the patient, the same remedies which are usually employed to control the rheumatic fever, and concomitant endocarditis, or pericarditis, are equally appropriate to arrest the progress of the pneumonia.

Medical Gazette, June 13, 1845, *p.* 269.

43.—*Alum in Bronchitis.*—Dr. Andrews, of Teddington, strongly recommends the use of alum in acute as well as in chronic bronchitis. His usual formula is forty-eight grains in five ounces of half-boiling water, with half an ounce of syrup. The dose varies from half a drachm to half an ounce three or four times a day, according to the age of the patient.

Dr. Cowan's Address, Prov. Trans., No 1, *N. S.*, 1845, *p.* 79.

44.—*Iodide of Potassium in Asthma.*—Dr. Casey describes the effects of this remedy as being highly satisfactory; he has administered it in more than five-and-twenty cases, and in no one instance, where a fair trial has been made, has it failed to afford unequivocal and decided relief. The dose varies from two to five grains three times a day. The writer remarks:—

I feared, at the outset, that the medicine would prove to be merely a palliative, (and even then it would be invaluable,) but further experience warrants my belief, that in mild cases of recent date a cure may be effected by its means.

In almost one-fourth of my cases, relapses have occurred after discontinuing the remedy; this occurrence, however, was in most of them owing to severe attacks of catarrh, or to errors in diet and consequent derangement of the digestive organs, which, by the way, should never be overlooked in the treatment of asthma. I may mention in this connexion, that most of my patients, while using this medicine, had an excellent appetite, and gained flesh rapidly.

A long-continued use of the iodide of potassium will in some subjects occasion an eruption, generally of a pustular form, (almost

always ecthyma;) and I have been twice disposed to attribute it to the occurrence of a slight conjunctivitis: the omission of the medicine for a few days, together with a few doses of rhubarb and soda, will be found sufficient for the removal of these inconveniences.—*Boston Medical and Surgical Journal.*

Lancet, June 7, 1845, *p.* 654.

45.—*Tar-vapour in Hooping-cough.*—[Mr. Waddington recommends in the treatment of hooping-cough, which has lately been so prevalent, a remedy which is, to say the least, cheap, and easily applied. He says,]

There are three stages of hooping cough. In the first stage, the patient should be taken into the open air, as usual, if the weather will permit, live sparingly, and take every now and then a gentle emetic.

In the second stage, confine the patient to a bed-room and sitting-room upon the same floor, communicating with each other. In these rooms Swedish tar should be kept boiling, night and day, over a small lamp; thus the vapour of tar will pervade both rooms.—When the symptoms run high, the remedy is almost miraculous.

Lancet, June 21, 1845, *p.* 722.

ORGANS OF DIGESTION.

46.—ON THE VARIOUS FORMS OF DYSPEPSIA.

By Robert Dick, Esq, M. D.

[Dr. Dick prefaces a series of papers on dyspepsia by an enumeration of its causes, of which the first and simplest is an improper quantity of food, by which the natural contractility of the muscular coat of the stomach is gradually lessened. The viscus thus loses tone to such an extent that it will not regain it even when empty.

Then after noticing the colour and appearance of the mucous coat, and the quality of its secretion, he says,]

The gastric juice is distict from mucus. The former never flows except at the stimulus of food. The mucus is neutral; the gastric juice acid. The latter, differently from the former, is limpid.—Rising through the mucous surface, it appears in shining specks, which bursting from the orifices of the minute organs which secrete them, diffuse themselves over the whole surface of the stomach. As no sooner than food is swallowed, the alimentary mass is by a rallying movement of the stomach hurried from the fundus along the great curvature and back to the fundus along the lesser curvature; hence, the gastric juice, which flows all the while, is by this incessant tumbling of the contents of the stomach completely mixed up with the food.

From the description now given it will be easily understood how excessive meals must operate injuriously. Over-distension of the stomach frequently repeated overcomes (as we have stated,) the

resiliency of the muscular coat. A species of muscular impotence ensues; the food lies comparatively motionless in the flaccid organ, and the important process by which the gastric juice is mixed intimately with the food, and brought in contact with the surfaces of the minutest fragments, is very imperfectly effected. Hence, just in proportion to the degree and permanence of over-distension of the stomach, is digestion tardy and imperfect; and as food, not transmitted downward, in due time acts, in consequence of chemical changes, and accumulations, as a morbid stimulant, various untoward consequences arise.

Over-distension and its ill effects may not be confined to the stomach, but excessive meals may extend their disastrous consequences over the whole alimentary canal. An alimentary mass larger than the system requires, and than can be duly digested, distends, in turn, the duodenum and small intestines (interfering, meantime, with the free excretion of the liver by the common duct), and, in consequence of the flaccid condition apt to be induced in the parts now named, impactions of the duodenum, and scybalous accumulations in the small intestines, frequently occur. Another hurtful consequence of large, frequent, and stimulant meals, is the production of permanent hyperæmia of the mucous coat of the stomach, than which state nothing interferes more with the function of a secreting surface.

On the other hand, symptoms occasionally present themselves in practice, that leave little doubt as to their being caused by a *contracted* state of the stomach and intestines. These occur in dyspeptics, who, harrassed by the morbid sensibility of the stomach and bowels to almost every sort of food, have acquired a habit of taking aliment in only the smallest quantities and most concentrated forms, and into an almost total disuse of fluids. In these circumstances the stomach and bowels shrink amazingly, and any sudden increase in the volume of food is sure to cause in the first instance considerable suffering.

[From the curious experiments of Dr. Beaumont upon the stomach of St. Martin, we learn that dietetic excesses, especially in drink, produced serious effects upon the mucous secretion. This then became preternaturally viscid, and was occasionally tinged with blood, from an erythema, and aphthous spots, which at such times covered it, as well as with bile. On other occasions there was suppression of mucus, when the food was exposed directly to the delicate papillæ of the lining membrane, causing intense burning pain. And the secretion at times became so acrid, as even to excoriate the edges of the external aperture.]

It is obvious that as improper food almost necessarily sooner or later ensures stomachic derangement, so stomachic derangement, by a similar necessity, involves duodenal disorder; the vitiated chyme of the stomach being to the duodenum what crude or irritating food is to the former. The connection of the stomach with the duodenum may be stated as that of sympathy, but the relation of the duodenum to the stomach is something more. And the same

remark applies to every inferior part of the digestive tube as regards parts superior to it. The duodenum has to contend not merely with its own deranged secretions, but with those also poured into it from the stomach, which last cause probably often primarily induces duodenal derangement, and materially aggravates it if already induced.

Medical Gazette, May 2, 1845, *p.* 21.

[Some affections sympathetic with these derangements are then adverted to by Dr. Dick, and he speaks first of]

Sympathetic affections of the Heart in Indigestion.—In many of the forms of dyspepsia, the heart and its action are but slightly and occasionally affected, and that too only in the advanced stages of the disease.

But in cases in which the heart is already organically diseased, and even, sometimes, when we have reason to believe it healthy, we find that it is materially affected by derangements of the stomach.

1st. Flatulent distension of the stomach may produce pressure of the aorta, or on the vena cava inferior, arresting the flow of blood in either tube. The latter accident will tend to produce a vacuum in the right auricle and ventricle; the former, to cause distension of the upper part of the aorta and left ventricle, making it labour, and, if protracted or frequently repeated, tending to produce hypertrophy. In this way it is, that the apoplexies of full meals are produced: the blood, in its course to the lower extremities being impeded by the pressure of a heavy stomach on the aorta, is forced to the superior part of the body, and the carotids too strongly inject the brain.

2nd. If, in the progress of the dyspeptic affection, the liver becomes diseased, and its circulation being impeded, a less than due quantity of its double circulation is returned to the heart, the first of the two effects just pointed out, as resulting from flatulent distension of the stomach will ensue, causing a disturbed action in the right cavities of the heart.

3d. Indigestion may affect the heart by the route of the nerves. It may do this through the intercommunion of the various parts of the sympathetic itself; the splanchnic nerve, for example, conveying irritations to one part of the ganglionic circle, the cardiac nerves reflecting them on the heart; or the vagi nerves may be the channel.

Sympathetic Affections of the Lungs.—There is more than one mode in which derangements of the digestive organs may affect the respiratory ones, inducing first inflammatory action, and ultimately structural change in the lungs.

1st. Gastric irritation may be propagated along the œsophagus, and, if long continued, may engage the larynx and trachea in chronic disease, which may descend, and, after a time, affect the substance of the lungs itself.

2d. Enlargement of the liver, and frequent flatulent distension of

the stomach, may irritate the lungs, by impeding its play; and structural change of the liver, by rendering that organ inadequate to eliminate duly from the blood certain of its *effete* ingredients, may throw on the lungs the burden of doing this, by the law of *antagonism* pointed out by Müller, and thereby give rise to irritation in the respiratory organs.

3d. Irritation of the diaphragmatic nerve by an enlarged and inflamed liver may be transmitted to the medulla oblongata, where it has its origin, and be reflected on the pneumo-gastric nerves emanating from the same place, which may thus be the channel of secondary morbid manifestations in the lungs. Adhesions of the liver to the diaphragm, by irritating the phrenic nerve, may cause the same result.

It would be easy to show how the skin and the *sensal* organs are affected by the qualitative derangements of the blood caused by dyspepsia, as well as by nervous sympathy with the organs of digestion, when in a state of irritation or debility. It would be likewise easy to show, and to illustrate by many cases, how other organs, when deranged, sympathetically influence the digestive processes, inducing what may be called secondary indigestion.

As regards the *cutaneous surface*, it may be observed, that paralysis or constipation, more or less complete, of the skin, and the consequent interruption of a so extensive and important eliminatory outlet, must affect the gastric, hepatic, pancreatic, and intestinal secretions; in other words, the process of digestion. The liver is the organ which in this case most suffers. Irritation of the skin may also affect the digestive organs, through the peripheral branches of the sympathetic. The inflammation of the mucous membrane of the stomach and intestines which follows large scalds or burns of the skin, is referrible both to the stoppage of cutaneous exhalation from an extensive disorganised surface, and also to nervous irritation propagated by the route just noticed from the periphery to the centre of the body. And the occasional retrocession of morbid action, in eruptive fevers, is not always chargeable on rash exposure to cold repelling the disease inward, as the nurse will tell you, but partly, at least, to the exanthema so profoundly and extensively affecting the cutaneous surface, as gradually to interrupt the respiratory function; thus forcing an already irritated and enfeebled organ to take on it a dangerous *antagonistic*, or (to use what is perhaps a more proper word), a supplemental or substitutive action.

Filthy states of the cutaneous surface, may, it is obvious, by interrupting the function, disorder the digestive organs.

The above facts enable us to reconcile the apparently opposing statements of dyspeptics; some alleging that cold improves their digestive powers, others that heat does so. In cases of gastric irritation, with a hyperæmic state of the mucous surfaces, heat, acting on the skin, and producing the effect of a great derivant or counter irritant, will no doubt relieve central congestion and irritation. In cases of indigestion, depending on atony and anæmia of

the stomach, external cold, forcing the blood to internal parts must improve the action of the organ: for where there is vascular determination, volume, and activity, *not* of an inflammatory character, there secretion and muscular action are improved.

The lungs may influence the digestive organs, by irritation existing in the mucous membrane of the former being propagated down the œsophagus on the mucous membrane of the latter. I believe that slighter degrees of gastric irritation, shades of sub-inflammation, are often thus transmitted from the thoracic to the abdominal mucous surface. Again, the *par vagum*, irritated in the lungs, where the higher branches are given off, may manifest functional derangement in its gastric divisions; or the sympathetic may be the route of sympathetic functional disorder of the stomach. There is another cause, which though operating extensively, ought not the less to be noticed, because its effect is of a very general nature. I refer to pulmonary congestion, it matters not from what cause. It must have a tendency to beget abdominal plethora and hyperæmia of the mucous surfaces of the stomach and intestines, which, though commonly reckoned among mere functional derangements, because not strictly structural, yet, when continued, have all the ill effects of structural disease.

It is difficult, observes Dr. Johnson, to account for the production of dyspepsia by disease of the heart, except on the physiological principle of sympathy. Now Mr. Langston Parker, in his work on the "Stomach in its morbid States," has pointed out one way. "On examining," writes this gentleman, "into the state of a patient labouring under what he himself considered mere prolonged and obstinate indigestion, *I discovered he had extensive valvular disease of the heart*, and that his stomach disease resulted from an unusual quantity of blood retained in the mucous coat of the stomach and its veins, from a mechanical obstacle to its free return to the heart, caused by disease existing in that viscus." But the cause here indicated by Mr. Parker probably extended its influence further than the mucous coat of the stomach. Doubtless, the liver and the mucous coat of the duodenum and intestines, were kept in a condition of vascular plethora, as well as the stomach. Here, then, is a most distinct and satisfactory exemplification of one of the modes in which cardiac disease may affect the stomach and the abdominal organs generally.

Next, as regards dyspepsia sympathetically induced by derangement of the cerebro-spinal centres, we may take Müller's explanation. "When these central organs," he observes, "are exhausted by want of rest and sleep, or by the impression of acute diseases, *the dependence of the organic viscera on them*, which is not observable when the supply of nervous influence to the sympathetic is arrested only for a short time, *becomes as evident as in parts supplied by cerebro-spinal nerves*." Hence, intense or prolonged mental exertion or moral excitement, exhausting the brain; extensive and severe affections of the skin, draining the central nervous power, through the cerebro-spinal nerves, and causing, through the cerebro-spinal

axis, reflex irritability of the sympathetic, and through the sympathetic, of the digestive organs, or else diverting from the organic nerves the reinforcing reparative influences of the nervous centres, may give rise to dyspepsia. Thus it is that, through the influence of the brain and its prolongations, MIND and its operations influence digestion.

[After this sketch of the symptoms, Dr. Dick proceeds to the treatment of indigestion. The first subject considered under this head is that of constipation, and the management of the bowels.

To one form of costiveness, which often long precedes derangements of the stomach, duodenum, and liver, he applies the term "constipation of youth," from its occurring between the fourteenth and twenty-second year. He considers that it is caused by a dryness of the intestinal canal, dependent upon active assimilation and absorption, and the exhaustion of the fluids by perspiration, &c. Viewed in this light it is a sign of a vigorous constitution, and is compatible with the highest health, and most active state of the digestive organs.]

In all cases relief should, in the outset, be attempted by *injections;* at first simple, that is, consisting of tepid water; then medicated, that is, of water having soap or salts, common or Epsom, castor or olive oil, infusion of senna, with tincture of assafœtida added to it. Gruel, with oil of turpentine, forms an excellent injection in cases of colicky constipation. An enema, then, formed as now directed, and of considerable volume, should be thrown up every morning after breakfast. After a time, and when the habit of evacuation is established, a smaller enema, and a simple one (supposing it to have been necessary to commence treatment with a medicated one), will be found sufficient. As the dryness of the intestinal contents, arising from active absorption, is the sole derangement, and as this is confined to the colon, the artificial assistance of an enema is all that is usually required.

The advantage of endeavouring to cure this form of constipation by injections, is, that as no other part of the intestinal tube than the colon is at fault, so to no other part is the remedy addressed. Besides that, the giving of aperients by the mouth, for a simple disease affecting the opposite extremity of the intestinal tube, is a circuitous measure; the practice is, moreover, fraught with inconveniences and risks. In order to lubricate the lower bowel, to which the disorder is confined, the secretions of the whole of the upper part of the intestinal tubes, that is, of the stomach, duodenum, and small intestines, are, by the method now referred to, artificially augmented, and these parts and organs are thus insidiously accustomed not to act efficiently unless from the stimulus of purgatives.

[If, however, some purgative by the mouth be indispensable, aloes, sulphur, galbanum, and others, which act only on the lower portion of the bowel, should be chosen. Farinaceous diet is recommended for young persons liable to this form.

Dr. Dick next speaks of those forms of constipation which succeed to indigestion, are insidious in their progress, and alternately better or worse according to the diet, exercise, &c. taken. The derangement of the intestinal canal increases however with the dyspeptic derangement.]

This is partly owing to the gradual extensions down to the lower parts of the canal, of the same causes which are productive of indigestion in its upper: as hyperæmia, muscular or nervous atony, irritability, morbid sensibility: and, partly, to the failing vigour of the organs at the superior part of the abdominal cavity, by which is permitted the transmission downward of crude and ill-digested, and, consequently irritating matters; as well as to the morbid influence which the vitiated secretions (formed in the stomach, duodenum, liver, and pancreas), exert on the mucous membrane of the inferior bowels.

As in persistent indigestion, the organ in the upper portions of the intestinal tube acts by fits—as, for example, the liver seems occasionally to continue several days in a constipated condition, during which, however, bile is formed in the viscus, but not discharged, until, at length, stimulated by the accumulation, there is suddenly poured forth a torrent of concentrated bile—so the bowels, sluggish during the late torpor of the liver, are suddenly excited to action by the descent of this exasperating flood, and urged into acrid and tormenting diarrhœa. Thus constipation and looseness alternate. The evacuations are either, in the intervals, too scanty, producing no comfortable sensation of relief, or they are lax, and probably morbid in appearance.

In the treatment of bowel derangement, consequent on dyspepsia, we may draw useful hints from the nature of the stomachic affection. The medicines designed to act on the intestines are to be combined with those required for the stomach. For example, aloes, as a purgative, may be variously combined, as follows. Thus, constipation, with nervous irritability, and morbid excitability, requires aloes, with hyoscyamus and ipecacuan. Constipation, with indolent liver, and deficient biliary secretion, requires aloes, with Plummer's, or blue pill, or calomel and ipecacuan. Constipation, with muscular atony, and with anæmia, requires aloes, with quinine and iron. Thus the purgative may remain the same, constipation being present; the medicines conjoined with the purgative being varied. Other purgatives, as rhubarb, scammony, colocynth, sulphur, soap, magnesia, may of course be substituted.

In almost every case of chronic and functional derangement of the bowels resulting from indigestion, and requiring purgatives, some sedative or anodyne should be conjoined to the laxative. The best medicines for this purpose are extract of hop, lettuce, or hyoscyamus. In rarer cases, the hydrochlorate of morphia.

When the bowels are irritable, irregular, and the stools scanty, but frequent and teasing, the plan to be followed is this. Means should be taken, by the exhibition of a slow laxative at bed-time, guarded by one of the laxatives above mentioned, to procure a stool

next morning after breakfast. This object should, if necessary, be insured by the administration of an emollient enema. Immediately after the stool has been obtained, or, at least, after two fair evacuations have followed, the bowels should be peremptorily quieted for the day by an anodyne; the usual mild laxative being repeated at night. By thus securing the repose of the bowels, after they have been emptied at a fixed hour, we take the most effectual means of restoring their vigour and their regularity. The best anodyne for tranquillizing the bowels during the day is the chalk mixture, with a few drops, if necessary, of a solution of the hydrochlorate of morphia. The compound Ipecacuan powder will answer the same end, given either in one sufficient dose, or in repeated small ones.

Medical Gazette, June 13, 1845, *p.* 275.

47.—ON THE TREATMENT OF HABITUAL CONSTIPATION BY ALUM.

By J. Aldridge, Esq., M.D.

[Alum has hitherto been but sparingly used internally, and principally in cases where its astringent properties were expected to prove useful as in diarrhœa, hæmoptysis, leucorrhœa, &c. With the same inattention it has been employed externally to arrest hæmorrhage from wounds, as a gargle or injection in many cases, and its use has been proposed for diphththerite, blown into the pharynx in fine powder.]

M. Barbier, who, if due allowance be made for his Brouisaian tendency, I believe to be the most enlightened enquirer in the department of therapeutics, says that "the impression of alum on the organs causes a sudden shortening of their fibres; its contact with the internal surface of the stomach occasions sometimes a disagreeable and painful sensation at the epigastrium. When taken in a large dose, it produces even nausea, vomiting, colic, and alvine evacuations. These accidental effects, evidently result from this saline substance attacking too violently the alimentary canal; this aggression disorders its natural movements. In other persons, alum gives rise to obstinate constipation; this effect chiefly arises when the salt is given in small doses. Whenever the molecules of alum are taken up by absorption, and carried through the body, they confer on all the organic apparatus, their strengthening power; they determine a development of tonicity in all the tissues: it has been remarked that they irritate the lungs and provoke cough." (Traité Elémentaire de Matiere Medicale, par J. B. G. Barbier.—Tome 1, p. 520.)

These views of M. Barbier appear to be confirmed by the pathological nature of the conditions under which alum has been found serviceable. Passive or asthenic hyperemias and secretions connected with a want of tone, or deficient vital contractility,

appear to be the common attributes of all the lesions for whose removal it is accustomed to be employed; and its utility under such circumstances, seems to point out, that its physiological action consists in developing a more exalted tone in the various tissues. But one of the best proved and remarkable examples of its curative efficiency may by some be considered as an exception to this rule. Of the utility of large doses of alum in painter's colic, there cannot be a doubt. Since the time it was first proposed in the treatment of this disease by Kapeler, the most extensive and trustworthy evidence has accumulated in its favour. I have myself given from half an ounce to six drachms of this salt in the course of a day, without producing nausea, or vomiting, or exciting epigastric pains; on the contrary, it calmed the colic pains, caused alvine evacuations, and promoted the urinary secretion. What is the pathological condition when the use of an *astringent* is found to produce such effects?

I believe that painter's colic does not consist in any vital lesion of the intestines, but that it depends on a paralysed condition of the spinal and ganglionic systems of nerves. This is an old doctrine, but not less accordant with the phenomena. The influence of lead in producing paralysis, is well exemplified in its effects on the upper extremities; and that the constipation which accompanies painter's colic in the result of an analogous paralysis is shewn by its yielding to strong purgatives and powerful stimulants. The severe twisting pains that accompany this disease, do not offer a counter-argument, since Dr. Osborne has ingeniously demonstrated, that neuralgia is more frequently the result of a passive than of an active neurosis.

If the pathology of painter's colic be admitted to consist in a feeble or paralysed innervation, there can be but little difficulty in understanding why a tonic, such as alum, should prove beneficial in its treatment. Just as quinia or chalybiates cure neuralgia, does alum by restoring the natural energy of innervation, relieve colica pictonum.

[Mimosis acutus was first accurately described by Dr. Marshall Hall, though in reality a very common disease. The constipation in this disease, Dr. Aldridge thinks, is dependent on feeble nervous action, and accordingly finds alum of great benefit in its treatment. It usually occurs between the ages of thirty and fifty, and is more frequent in women than men, on account of their sedentary habits.]

The individuals who labour under it, are usually of a dusky complexion, or more exactly speaking, the skin always presents a dirty appearance. The face is frequently coated with a greasy looking perspiration. The breath is foul; the gums spongy, and apt to bleed; the tongue broad, flat, flabby, indented at the margins by the pressure of the teeth, and coated with muco-purulent exudation. The bowels are usually constipated; yet the patient may tell you that he has daily alvine evacuations, and yet the colon may be in a state of distension from fœcal accumulation. The abdomen is

swollen, and feels unequal to the hand, the course of the ascending and transverse colon, being more resisting than the other parts to pressure; in these situations there is also sometimes tenderness, and even pain. Besides the foregoing symptoms the patient almost constantly complains of headache; says he is very nervous, subject to tremors, and sudden flushings of heat upon excitement; as well as palpitation of the heart, and epigastric throbbings.

[Purgatives were recommended by the describer of the disease; Dr. Aldridge, however, found that, though serviceable at first, the necessity for their use increased each time, whilst the benefit produced, gradually diminished, and accordingly, he determined to try alum.]

Looking on mimosis acutus, as a disease essentially consisting in a semi-paralytic state of the ganglionic nervous system, its analogy to colica pictonum seemed very evident; and in connection with this analogy, the medicine that was found useful in the one disease, would naturally suggest itself, as being likely to prove beneficial in the other. Accordingly, I was led to exhibit alum in comparatively large doses, in cases of habitual costiveness accompanied by the symptoms which I have described, and experienced its administration to be followed by advantages, which could not be hoped for from the use of ordinary purgatives. It may appear paradoxical to give an astringent in cases characterised by constipation, but in the treatment of every disease, we should as far as possible ascend from the consideration of symptoms, to a contemplation of the lesions upon which they depend.

[Cases are then given illustrative of its use. Combined with magnes. sulph. he has found that the disagreeable taste of this salt is greatly disguised, whilst the tendency of the saline purgative to increase the formation of gas is controlled. In the dose of ℈j. or ʒss., alum by itself will produce large and very solid evacuations. The cantra-indications to its use are of course the existence of gastro enteritis.]

For private practice the following formulæ may be employed:—

℞. Infusi Rosarum, ℥8.; Sulphatis Magnesiæ, ℥1.; Aluminis, ʒ2. Misce. Sumat cochlearia duo ampla cum aquæ cyathis vinariis duobus, primo mane, quotidie.

℞. Infusi Rosarum, ℥7ss. Aluminis. ʒij. Tr. Cardam. comp. ℥ss. Misce. St. cochlearia ampla duo, ter die.

Dublin Hospital Gazette, July 15, 1845, *p.* 162.

48.—ON AN EPIDEMIC ULCERATION OF THE GUMS IN CHILDREN.

By J. F. Duncan, Esq., A.M., M.B., &c. Physician to the North Dublin Union Workhouse.

[In the North Dublin Union Workhouse, with which Dr. Duncan is connected, are a large number of children, and as many as sixty or

eighty under two years of age. In such institutions disease seems to be modified by a peculiar atonic state of the system, and some diseases of an asthenic nature, which are elsewhere rare, not unfrequently occur. The very severe and fatal ulceration of the mouth and gums of infants, with high fever, and apparently of epidemic origin, which forms the subject of Dr. D.'s communication, may be considered an example of the position. It first occurred in the winter of 1843-44, was usually preceded by diarrhœa, without, at first, any signs of enteritis. After a few days, the state of the mouth attracted notice; on examination the gums were found ulcerated, the fangs of the teeth exposed and covered with sordes. If the disease were not checked at this stage, it advanced rapidly to a fatal termination. The ulceration of the gums was very similar to that produced by mercury: which, as in these cases it was of an undoubted constitutional origin, should induce great circumspection in pronouncing such to be the cause, when a case may be met with in private practice. Indeed it was found in these cases that, so far from tending to produce the disease, mercury might be given both with safety and benefit to the patient.

The spongy state of the gums, with their tendency to bleed, point out an analogy, with purpura hæmorrhagica, another disease of impaired blood, which is borne out by the discharge in each case of blood in the stools.

The great importance of establishing a diagnosis between this disease and common mercurial ulceration of the mouth is self-evident. The opinion of Dr. Duncan is that it is only a form of cancrum oris, and that of neither is mercury to be considered the exciting cause. If this can be proved, then shall we be able to banish our apprehensions, and avail ourselves of the valuable therapeutic properties of this mineral in its treatment. The importance of establishing this point is further illustrated by the late frequency of accusations and prosecutions for malpraxis, when the real cause of death was cancrum oris. In some cases the verdict has been given that over doses of mercury were the cause of death, in others the physician has been acquitted, but whether or no, the impression on the mind of the public remains, and the mere accusation is almost equivalent to conviction. Many cases are upon record where not a single particle of mercury has been given.

It is essential that we should ascertain whether in those cases where mercury was given, it had any thing to do with the production of the disease; for if it had, then must we avoid using it, if not, we may avail ourselves of it in the treatment.

The differences between cancrum oris and mercurial sore mouth, are first, in the salivation, which in the former, though decided, is slight; there is likewise, a perceptible difference in the fœtor of the breath, but the most distinguishing characteristic is the ulceration of the gums, which in the disease in question is usually confined to *one side* of the mouth, whilst in the mercurial affection, the whole is equally affected. Dr. Marshall Hall also particularly notices this, having found it in a case which he examined. Other arguments in

support of the opinion that it is not dependent on mercurial action are, that it occurs almost exclusively amongst children, who are scarcely susceptible of that action. Again, it is well known that the action of mercury cannot be produced during the existence of fever, yet this is an invariable accompaniment of the disease under consideration. But the most conclusive of all is, that mercury may be beneficially employed in its treatment.

In the scientific investigation of disease, we endeavour to classify such together as appear to possess the greatest analogy, for when this is established similar treatment is available for either case. Now cancrum oris is admitted to resemble very closely the gangrena pudendi of young females, and during the epidemic which Dr Duncan considers, one case of the latter actually occurred, thus satisfactorily proving their common origin. Mr. Kinder Wood first pointed out the unhealthy condition of the digestive organs in the cases of gangrena pudendi which had come under his notice, that will be found to occur in cancrum oris.

The pathology of the disease appears to be essentially an inflammation of the intestinal mucous membrane, the mouth affection being merely a part of a more general morbid state. The diarrhœa, and in the fatal cases, ulceration of the intestinal mucous membrane, point to this origin, which is confirmed by the peculiar gastric form of diseases prevalent at the time.]

Having satisfied ourselves as to the true nature of the affection, it follows, as a matter of course, that our principal attention is to be directed to the cure of this intestinal inflammation. So far as my observation went, I remarked that little benefit resulted from local treatment; I tried various astringent and other gargles and applications, borax and honey, muriatic acid and sulphate of copper, but found them to exert no appreciable influence upon the disease, while constitutional remedies certainly did. The ordinary astringents, such as chalk mixture, catechu, and acetate of lead, often failed to check the diarrhœa; and even opium, given in as large doses as I thought safe to patients so young, did not appear more effectual. The best internal medicine for this purpose was an acidulated decoction of bark, or an infusion of columba and nitric acid. This controlled, in a remarkable degree, the diarrhœa which had resisted other remedies, was readily taken by the children, and did not appear to produce any unpleasant effects. I have already mentioned the fact of my having used mercurial preparations, in the form of Hyd c. Cretâ, combined with Dover's Powder, with considerable encouragement. I was induced to resort to this class of medicines from observing the unhealthy condition of the alvine discharges. Of course I did not think of using this combination at the same time that the patient was taking any acidulated medicine. And the great benefit the patient uniformly experienced from this form of administering the bark, coupled with that hesitation which always must attend the use of a medicine in unusual circumstances, prevented me persevering very long in its administration, unless when I saw there was no immediate danger, or that it was decidedly agreeing.

But the most valuable agent I met with in the management of these cases was a speedy and decided counter-irritation of the abdominal surface. The excitement of the capillaries here relieved, in a remarkable manner, the congestion that existed within. For many reasons I did not resort to what may appear a more appropriate plan of operation, namely, leeching. The peculiar constitution of the patients, the character of the prevailing diseases, and the observed effects of the mode of drawing blood in kindred affections, deterred me from their use. The best mode of producing a light, and at the same time a sufficiently enduring irritation of the surface, I found to be the laying on of a mustard poultice on the abdomen, till the skin was reddened, and the immediate application of a blister on the part for a single hour. Its action was speedy, safe, and effectual. It never failed to vesicate, and its subsequent management was altogether free from those unpleasant effects that are so often met with in blistering children. It was astonishing to find how instantaneously it acted in checking the progress of the disease. It controlled almost immediately the distressing and wasting diarrhœa, lowered the fever, and improved the condition of the mouth.

Throughout the progress of the disease it was necessary to support the patient's strength, and for this purpose wine was given very freely. In all cases its first administration was carefully watched, and where it seemed to disagree it was instantly laid aside. But in the majority of cases it harmonized admirably with our intentions, quenching the patient's thirst, supporting his strength, and diminishing the diarrhœa. Billard, the able French writer on the Diseases of Infancy, gives a correct view of the pathology of these affections of the mouth, both in his text and his illustrative cases; but he falls into the mistake, so common to his countrymen, of supposing that the presence of intestinal inflammation must be an insuperable barrier to the administration of stimulants, forgetting the important truth in practical medicine, that inflammation may be of opposite characters, and require either a stimulating or an antiphlogistic mode of cure; and when we read the cases he has detailed in the work referred to, we cannot help thinking that had he adopted a more rational view upon this subject his treatment would have been more successful. Whenever we find the practical conclusions of direct experiment contradicting the apparently well-established doctrines of a favorite theory, we may be sure that the latter are at fault, and the sooner they are modified or abandoned the better for the cause of science. Firmly believing as I do in the intestinal origin of this disease, I am equally persuaded of the safety and necessity of administering stimulants with due discretion, but with sufficient boldness, even at an early period, in the progress of the case.

[One or two of the cases detailed will be all that it will be needful for us to give. The following may be taken as a type of the rest. A child, healthy previously, is admitted into hospital with high fever, and determination to the head, purging, &c. Under

treatment the child improves, but on the sixth day the mother mentions that the mouth is sore, when the symptoms, as fœtor, &c. formerly detailed, are found present. A gargle and aperients remove these, and the patient is discharged. A relapse occurs, and]

The checks on both sides of the face are found considerably swelled, and somewhat tense; the right cheek particularly so; it had a dusky coloured appearance on the external surface. There was a striking contrast in colour between the dark purple of this portion of the cheek, and the pale sickly hue of the rest of the face. No ulceration could be detected on the inside, but the gums of the front teeth were ulcerated at the roots. There was a bad smell from his breath; and running of saliva from his mouth, in small quantity, occasionally. The bowels were confined; the dejections whitish and offensive. The gums bled whenever touched. He was ordered to resume the use of senna tea, and syrup of quinine in doses of the one-eighth of a grain three times a day; and a gargle of dilute muriatic acid, in honey of roses, to wash his mouth.

On the 11th November, the report states, has been improving till to-day: face is rather more swelled; has been burning all night; excessive thirst. Bowels open; tongue foul; dejections as before; gums swelled, ulcerated, spongy, red, and bleeding.

He was ordered five grains of Hyd. c. Cretâ and five of rhubarb, at bed-time; the senna mixture in the morning, and to have two ounces of wine through the day.

Under this treatment, repeated occasionally, and assisted in the intervals by the use of an acidulated infusion of bark, he improved wonderfully; lost a great deal of the sickly aspect he had imbibed, and left the hospital on Nov. 27, 1844, with but few traces of the affection remaining, and has since continued well.

[Another case differs somewhat, the child being of a delicate habit. After the diarrhœa, fever, &c.,—]

On examining his mouth, it was found to present the symptoms of ulcerous stomatitis in a well-marked form; the gums of the front teeth were swelled, red, and spongy; ulcerated at the insertion of the teeth, so as to leave the fangs somewhat denuded; at the margins there were reddish lines from a tendency to bleed, which immediately exhibited itself on the gums being touched by the finger, or by the mere effort to keep the mouth open. On the day preceding his admission there was slight hæmorrhage from the mouth; his breath also had a fœtid smell. He was ordered a mustard poultice over the abdomen, to be succeeded by a blister for one hour after the sinapism was taken off, and a dessert-spoonful of the following mixture:—

℞. Acid. Nitric. dil. gtt. xii.; Infusi Calumbæ ℥ivss.; Tinct. Cinchon. C. ʒiv.; Syrupi Aurantii ℥i.

May 6th. Blister rose well; diarrhœa diminished; dejections more healthy; thirst less; slept well; mouth nearly as yesterday.

℞. Mellis Boracis ℥ss.; Dec. Hordei c. ℥iiiss. Fiat Gargar. sæpe in die utend.

May 7th. No diarrhœa; bowels moved only once yesterday; dejections healthy; slept badly, probably from pain of blister. A patch of dark-coloured erythema at left elbow; also an eruption of stigmata over body, resembling measles. Tongue whitish; very little appetite; great thirst; pulse 120; mouth as yesterday.

Adhib. Catap. Micæ panis parti vesicatæ.

May 8th. Some appetite to-day; mouth clearer. The erythema has spread a little, and changed its place.

Cont. Medicamina.

May 10. Considerably improved. Fever diminished; appetite returns; gums improved in appearance; the lower one has lost its red and spongy condition, though the roots of the teeth are still exposed. The upper one is less swelled, and less disposed to bleed.

[An eruption afterwards appeared, resembling itch; mercurial alteratives were exhibited, the evacuations again became healthy, and the child recovered.]

Dublin Journal, Sept. 1845. *p.* 1.

49.—ON THE USE OF CREOSOTE INJECTIONS IN CAMP DYSENTERY.

By J. B. Willmott, Esq., M.D.

[By "camp dysentery," Dr. Wilmott means the epidemic form which often proves so deadly a scourge in large communities. On the 3rd October, 1844, he was requested to visit the Tonbridge Union House, at Banbury, where a fatal dysentery was raging. At his second visit, on the 10th, he made a *post-mortem* examination of two fatal cases. In the first, there was injection and ecchymosis on the inner part of the ilium; the mucous membrane was so ulcerated that a mere tracery work, like lace, was left of it. The cœcum also was ulcerated; but not the colon. In the second case, the rectum and last three inches of the colon were much ulcerated.]

Several cases had occurred since the 3rd. The most pressing was that of a man, æt. fifty-one, who was attacked on the 1st, and in whom the remedies, up to this day (the 11th), had been of little or no avail. He was greatly exhausted—had constant evacuations of blood, with shreddy matter; no fæces; the smell was putrid and gangrenous; hot turpentine fomentations were ordered to the belly, and, in addition, the author was led to try an injection composed o ℥j. of creosote in 12 oz. of starch. He did not, he observes, use it empirically, but—looking at the character of the fever, of the slow nervous kind, the inertness of remedies introduced by the stomach, the little control exercised by medicines locally applied to allay

spasm of the gut, the local nature of the disease as shewn by inspection of the bodies, the disposition to gangrene, as well as ulceration, and the antiseptic and stimulant powers of creosote—these considerations induced him to try the remedy. On the 12th, the patient was rather better; the injection had caused a tingling sensation, but no pain. On the following days he gradually improved; and on the 18th the evacuations were copious, highly offensive, containing a quantity of hard scybala. No blood or shreds were passed. The turpentine had been applied four times, and the creosote injection used every night since the 11th. After this he soon became convalescent. In several other cases, either under the observation of the author or his friends, this remedy was used, and with evident advantage.

It may be objected, the author remarks, that my field of observation was too limited to arrive at any satisfactory conclusions; but so marked and undeniable was the success of the measures adopted in the few cases brought under my notice, and so confident do I feel that they would have been equally efficacious had the disease continued to spread, that I will venture to expose myself to such an objection rather than withhold the publication of results, which may at a future time assist in arresting so fearful a disorder.

Medical Gazette, May 23, 1845, *p.* 162.

[In discussing the merits of the above remarks, Dr. Baly says that the value of calomel in dysentery is unequivocal. He was surprised that Dr. Wilmott had found it of no service. In the epidemic dysentery which occurred in the Penitentiary in 1823, in combination with large doses of opium, it soon cut short the disease. He thinks that creosote may be occasionally employed as an adjunct, but that so purely a local remedy could not of itself arrest inflammatory dysentery.

In answer to a question by Mr. Lloyd, Dr. B. stated that when starch and opium injections failed, three or four ounces of warm black wash, with laudanum, had occasionally succeeded. When ptyalism occurs after its use, Dr. B. attributes it to the calomel given at the same time. Dr. Burrows fully agreed with Dr. Baly in his opinions.

Dr. James Johnson had in no instance seen dysentery result from ontagion. With Dr. Baly, he believed, when epidemic, that it depended on atmospheric causes. The use of calomel and opium, the recumbent posture, and anodyne injections, he had found most generally attended with success. Calomel and opium was our sheet anchor in hot climates. Recovery usually followed the production of ptyalism. He had lately used tannin with much success in this disease. It had the advantage of being less irritating than creosote, was a powerful astringent, and could be easily injected into the bowels.]

50.—ON THE USE OF ACETATE OF LEAD IN DISCHARGES FROM THE BOWELS.

By R. J. Graves, Esq., M.D., M.R.I.A., &c.

[In case of hæmorrhage from the intestinal canal, we have no means of certainly knowing that a cure has been effected until a stool is passed perfectly free from blood. Till then we cannot consider the patient out of danger, as the discharge will frequently appear to stop for a while under the use of remedies, and caution must therefore be used before we pronounce the patient cured.

Dr. Graves makes these remarks in the course of a clinical lecture, but states that in the case under consideration, the following source of error still exists.]

The discharges which this young woman has passed are all of a slate colour. How is this produced? It arises from the mucus of the bowels being coloured by the acetate of lead. Acetate of lead, when used in large quantities for any considerable time, invariably blackens the evacuations. Here the colour is merely dark-grey or slate-colour, for the quantity she has taken is small. You can, however, always distinguish this tinged mucus among the natural discharges, the colour being mixed only, and not blended with the latter, as it is with the former. But if the evacuations be of a dark colour, such as is seen in cases where blood has been effused into the intestinal tube, and changed by the acid juices of the canal into a dark coffee ground or nearly inky appearance, it becomes very difficult to distinguish this from the tinge given by acetate of lead, unless you are accustomed to it. In the present case there does not seem to be any thing more than a tinging of acetate of lead; nor have we been able to trace any thing like coagulated blood in the stools. I may observe here, that a considerable degree of error has existed with respect to a peculiar greenish discharge from the bowels, composed of morbid matter secreted by the diseased mucous membrane. I was the first person who pointed out this fact in the fourth vol. of the Dublin Hospital Reports. All practitioners before me, and among the rest Dr. Cheyne, attributed this to an effusion of morbid bile. This error, I regret to say, is still prevalent: you will hear medical men, when they meet with this discharge in children, say that it is the result of a morbid secretion of bile, and that the child requires calomel purgatives to carry it off. It is true that morbid bile may irritate the intestinal mucous membrane so as to cause an effusion of this green secretion, but still this is not bile. Bile, when secreted in large quantities, is never green; it may present a lighter shade of yellow, but it is never green. This secretion comes from the surface of the small intestines, and is generally the result of irritation. What is the consequence of inflammation in other mucous tissues—in the eye, for instance, or in the urethra? Do we not see the mucus assume a yellowish, and even a greenish colour? The discharge from an irritated mucous membrane may

assume all shades from a pale white to a yellow or green. I dwell on this, chiefly to point out the gross error of looking upon the discharges from the irritated surface of the intestines in children as consisting of morbid bile. It is not depraved bile, neither is it to be removed by calomel or strong mercurial purgatives. It is by changing the diet, keeping the child warmly clothed, and prescribing small doses of hydrarg. c. cretâ with Dover's powder, that this diseased secretion is to be checked. What does calomel do? It frequently produces exactly the same state of the digestive tube. You will have in a patient taking calomel a copious secretion from the intestines of a deep green colour, resembling chopped spinach, accompanied with pain in the bowels and other symptoms of irritation, shewing the source from whence the discharge proceeds.

In the case of another young woman named Jones, who is now convalescent, tympanitis commenced nearly about the same period of fever, and under similar circumstances; but here nature attempted the relief of the abdominal congestion, not by an effusion of blood, but by means of a copious watery diarrhœa. She passed enormous quantities of this secretion, which appeared to consist of aqueous fluid, mixed with coagulated and shreddy mucus, so as to resemble decayed vegetable matter, which had been chopped small and left to macerate in water, until it became intimately mixed up with it. Now, as in the former case there was danger from excess of hæmorrhage, so in this case we had, from the persistence of the diarrhœa, reason to think that the patient would be run down by inordinate secretion. We therefore, after the lapse of a few days, attempted to check it by the use of acetate of lead and opium, with wine, and were so fortunate as to succeed completely. We gave her draughts, composed of acetate of lead and tincture of opium in camphor mixture—two grains of the acetate of lead, with five drops of laudanum, in each draught. Of these she took five the first day, four the second, and three the third. On the evening of the third day the secretion from the bowels was so much arrested, that it was deemed unnecessary to continue them any longer. Their use has not been followed by any unfavourable result. The patient has been improving rapidly ever since, and is now able to sit up.

Since I received a communication from Dr. Bardsley, recommending the trial of acetate of lead in that form of diarrhœa which comes on towards the termination of fever, and generally ends in ulceration of the Peyerian glands, I have made several clinical experiments with the view of ascertaining the powers of this remedy. I have found it exceedingly useful in controlling superabundant secretion in numerous instances. I have experienced the best effects from its employment, not only in the diarrhœa which accompanies ulceration of the mucous glands, but also in that species of diarrhœa which occurs at an earlier period of fever, and by means of which nature attempts the relief of intestinal congestion. Of its great value in the treatment of cholera I have already spoken; indeed, I do not know of any remedy by which inordinate

fluxes from the bowels, whatever may be their nature, are so efficiently treated. The same remarks will apply to super-secretion from the lungs. In cases of phthisis attended with such copious secretion as to threaten suffocation, it is very beneficial: its effects are equally remarkable in chronic bronchitis with copious expectoration, and you are all aware of the great efficacy it possesses in checking hæmoptysis. I have been in the habit of prescribing it in combination with laudanum and wine vinegar; the latter I have added on the recommendation of Dr. Thompson, of London.*

Medical Times, June 14, 1845, *p.* 196.

51.—*Remarks on a Case of Hæmatemesis.*—By Dr. Graves, of Dublin.—[The patient on whose case the following remarks are made, had for ten months had suppression of the menses, from which, in all probability, all her complicated maladies spring. These are anasarca and ascites, nausea, vomiting, colic pains, and costiveness. To these is supperadded hæmatemesis, which is, perhaps, merely vicarious menstruation; on this supposition the only hope of her recovery can be grounded. The pulse is quick, but small and weak, skin cool, and there is no epigastric tenderness. The proper treatment will therefore be to act on the supposition of its arising from a congested state of the gastro-intestinal mucous membrane, connected with chronic visceral disease. A variety of remedies are ordered to be tried, as in these cases precedent is of little use, and our only chance consists in being able to hit upon something which happens to make a favourable impression on the disease.]

I have in the first place, (says Dr. Graves,) prescribed the sulphate of iron in doses of half a grain, combined with one-sixth of a grain of opium, to be taken every third hour. In this way the patient will take from four to six grains of the sulphate of iron in the course of twenty-four hours. I need not explain to you that this remedy possesses powerful astringent effects; as a means of checking hæmorrhage from the stomach and small intestines, it has been recommended on very high authority. We have combined with it a small quantity of opium on the same principle which guided us in combining laudanum with acetate of lead in the case of intestinal hæmorrhage to which I have already alluded. If this fails, I have ordered the spirit of turpentine in doses of ten drops *in a spoonful of ice-cold water*, to be taken every half hour. The *rationale* of this prescription is easily understood. Cold acts as an astringent, and tends to excite contraction in the vessels of a part affected with passive hæmorrhage. Turpentine is also well known for its effect in checking hæmorrhage, particularly from small superficial wounds, where the capillaries are principally engaged in pouring out blood. Should these measures prove unsuccessful, we shall have recourse to

* See also papers on this medicine in Vols. i. Art. 32, ii. 89, v. 30, vi. 39, viii. 112.

acetate of lead and opium. I beg leave to observe here, that it is not my intention to give up any of these remedies hastily, and before a sufficient trial has been made; each is to be carried as far as shall be deemed necessary to obtain its specific effects, and the whole process is to be conducted under the superintendance of Mr. Nalty, in whose judgment and discretion I have good reason to confide. If the hæmorrhage should still continue, I have determined to make trial of ipecacuanha, a remedy which has been employed with remarkably good effect by Richter of Gottingen, and by Dr. Sheridan of this city, who in cases of hematemesis was in the habit of giving it to the amount of twenty-five or thirty grains in the day. I have myself prescribed it in doses of half a grain, a grain, and even two grains, every second hour, in pulmonary hæmorrhage, and certainly with very good effects. I cannot explain the rationale of prescribing for vomiting of blood a remedy which is generally followed by vomiting. The patient generally vomits after taking two or three doses, but it is a curious fact that the matter ejected from the stomach contains little or no blood.

Medical Times, June 14, 1845, *p.* 197.

52.—*On the nature of the green evacuations of Children.*—By Golding Bird, A.M., M.D.—[At the conclusion of a paper on the green alvine evacuations of children, Dr. Bird thus sums up his opinions on the subject:]

I regard the presence of green stools as indicative not of a copious secretion of bile, but of a congested state of the portal system, in which blood is exuded very slowly, and in small quantities, so as to allow of the colour being affected by the gases and secretions present in the intestines; a state of things capable of readily ending in malœna, in which the effusion of blood is so copious and sudden as not to give time for the occurrence of the changes alluded to.

There is, moreover, a peculiarity in the green dejections of children and others whose portal circulation is congested, which, so far as I know, is quite distinct from any property presented by mere bile under similar circumstances;—I allude to the effect of exposure to the oxygenating influence of the air upon them. When first voided the "chopped spinach" stools are in the majority of cases of a bright orange colour, and they assume their characteristic grass-green hue only after exposure to air. The time required for this change varies remarkably. I have seen an orange-coloured stool become green in a few minutes; and in the same patient, only a day or two afterwards, many hours may have been required to effect the same change.

Medical Gazette, Sept. 5, 1845, *p.* 803.

53.—ON THE REMEDIAL PROPERTIES OF OX-GALL.

By R. H. Allnatt, Esq, M.D, &c.

[In Retrospect, Vol. VI., Art. 16, the reader will find an excellent paper by Dr. Clay, of Manchester, on the use of ox-gall in different

diseases, and especially in dyspepsia. These remarks of Dr. Clay are confirmed by the experience of Dr. Allnatt.]

Habitual constipation, in persons of sedentary habits, generally arises from a deficiency of bile, and the food, in consequence, passes through the tract of the alimentary canal slowly, the peristaltic action not being sufficiently aroused by the natural stimulus to enable the bowels to expel their contents with regularity. The motions are clay-coloured, the more fluid parts become absorbed, and scybala are impacted in the lower intestines, forming a mechanical barrier to the transit of their contents. If portions of this scybalous mass, removed from the body, be subjected to the action of ox-gall, they become immediately broken down and dissolved, and, however clayey and indurated they may have been, are, in a few minutes, reduced to a healthy pulpy motion, of natural colour and consistence. This effect follows, also, if diluted ox-gall be injected into the intestines. I will give an example of this by a case treated exclusively by enemata:—

A. R——, a young lady, aged twenty, suffered from obstinate constipation, which had persisted upwards of a fortnight. She had been treated, previously to visiting me, by drastic purgatives, which produced pain and vomiting, and a feeling of general uneasiness, combined with ineffectual attempts to pass an evacuation. The lower portions of the intestines were evidently obstructed by impacted scybala. Injections containing turpentine were first administered, without affording relief. Two ounces of ox-gall, with about half a pint of thin gruel, were next thrown into the rectum: the exterior parts of the hard mass became immediately dissolved, and in the course of ten or fifteen minutes the whole was ejected, to the instantaneous relief of the previously existing symptoms.

Another case, treated by the internal exhibition of inspissated ox-gall, in the form of pills, was followed by results no less satisfactory:—

W. P——, a gentleman of active habits, by profession a civil engineer, was, after a course of mercury and opium, obstinately constipated. A feeling of sickness was perpetually present, vomiting occurred in the morning on rising, and a total loss of appetite ensued. He had taken strong irritating purgatives of croton oil and colocynth, with no other effect than that of aggravating the sickness and vomiting. This was the state of things when he applied to me. He was ordered five grains of inspissated ox-gall three times daily. On the second morning, a copious motion was produced, without giving rise to the slightest feeling of uneasiness in its action on the hardened mass.

Herein consists the peculiar value of ox-gall as a remedy. It is impossible to conceive one more harmless in its nature, or one that more comports with our intention in the exhibition: it supplies the natural stimulus to the intestines, and by a simultaneous mechanical action it breaks down the barrier by an easy process of dissolution, which often opposes itself to our best directed efforts. The third

example which I shall adduce is strikingly illustrative of the certainty of its effects:—

I was summoned hastily into the country to see a lady, seventy-seven years of age, who was apparently sinking from the effects of unrelieved constipation. Excrementitious vomiting had taken place, and the powers of life seemed waning. The question was, whether or not, from the violence of the inverted action of the intestines, intus-susception had occurred. On examination, I thought I could detect a hardened mass, impacted about the head of the colon, and evidences of accumulation below that point. I therefore advised, as a last resort, an enema of ox-gall and turpentine, (the latter ingredient more as a stimulant to the inactive bowel than for any specific effect,) with thin gruel, to be vigorously injected, warm, as far as possible into the intestine. In less than half an hour, a mass of scybala was expelled, the exterior portions of which had been imperfectly softened by the action of the gall, covered with a coating of thick mucus. Other portions speedily followed, and convalescence ensued, with no other unfavourable symptom than that of slight pain, which might have been produced by the action of the turpentine in immediate contact with the mucous membrane of the bowel.

There is one point, in connexion with the present subject, of considerable importance, and that is, the destruction of the narcotizing property of opium, when combined with ox-gall. The constipating effect of opium is principally produced by its action upon the liver, the secretion of which it arrests, and renders insufficient for the due stimulation of the alimentary canal. In many cases, this is a serious drawback to the exhibition of opium, for we often require its sedative, when its constipating effects would be sufficiently injurious to preclude its use. Five or eight grains of inspissated ox-gall will neutralize the effect of a grain of opium, without destroying its sedative efficacy. It also prevents, in a great measure, its injurious action upon the brain.

Lancet, June 7, 1845, *p.* 635.

[In another communication, Dr. Allnatt recommends the following process for the preparation of the inspissated ox-gall:—]

An open vessel, containing any quantity of perfectly recent ox-gall, should be plunged into a saucepan of boiling water, and simmered until the bile is of sufficient consistence to be formed into pills. It should be frequently stirred during the operation to prevent an unequal hardening of the mass. The addition of a little calcined magnesia will expedite the process. If carefully prepared, it will keep for years, and when required for use should be gently warmed before the fire.

Two drachms, dissolved in a pint of hot water, or thin gruel, will be of sufficient strength for enemata. One or two five-grain pills may be given twice or thrice daily, according to the exigency of the case.

Medical Gazette, June 20, 1845, *p.* 343.

[Dr. Lane *desiccates* the gall, and recommends the following process. He says—]

Healthy fresh ox-gall is a transparent fluid, of a bright, dark, grass-green colour; of a viscid, tenacious, equal consistence, of a strongly animal with slightly aromatic odour, and bitter alkaline taste. Bile of this description, taken from about a dozen bladders, should be poured into a deep earthenware vessel, and allowed to rest for about twenty-four hours; the supernatant fluid should be then poured into a shallow dish, such as an ordinary meat dish, and set into an oven, the temperature not exceeding 100° F., until the whole be reduced to the consistence of a pharmacopœial extract. Thus it is *inspissated* ox-gall, and easily made into pills. After employing it in this state for some time, experience showed the inconvenience which its highly deliquescent property entailed. For, kept ever so carefully, it soon became too moist for use—a difficulty which evaporating it in mixture with magnesia did not satisfactorily remove, while it so augmented the bulk of the substance as to disqualify it for employment in a pillular form. When rolled into pills, and buried in magnesia or powdered liquorice-root, or enveloped in silver or gold leaf, and put into well-corked phials, it still absorbed moisture, and they soon conglomerated into one mass. To obviate this troublesome difficulty and serious objection, as it proved, to the more extensive use of this invaluable remedial agent, I suggested that, instead of the gall being merely *inspissated*, it should be *desiccated*. For this purpose, it needs only to be allowed to remain at the same temperature, until there remains a dry, bright-green, friable, pulverulent, slightly aromatic mass; in which state the substance loses none of its medicinal virtues, its deliquescent character is nearly lost, it can be easily preserved in closely-stoppered bottles, and is with facility made into pills, particularly with any spirituous fluid, or essential oil, and will mix well with various salts that are otherwise not readily made into pills, while it is, where desirable, with facility mixed with other materials into powders.

Lancet, July 5, 1845, p. 27.

[In reply to this, Dr. Allnatt states that by using inspissated ox-gall, the yellow matter, formerly called "resin of bile," now picromel, would be lost. We quite agree with him that, until we are acquainted with the precise action of the different portions of gall on the economy, it is scarcely prudent to reject any in our modes of preparation.]

The following is the way to obtain picromel, which is said to contain all the active properties of bile:—Sulphuric acid, diluted with five parts of water, is mixed with fresh bile, when a yellow precipitate is produced. The mixture is then heated, and, on cooling, the clear portion drawn off. The precipitate is a greenish compound of picromel and sulphuric acid. Digest it in water with carbonate of barytes, and pure picromel is liberated in solution, which, on evaporation, will be obtained in a solid state. Another method consists

in dissolving the green sulphate of picromel in alcohol, and digesting the solution over carbonate of potash until it ceases to redden litmus paper. Picromel thus produced is combined with alcohol.

Pure picromel resembles inspissated bile, is of a greenish-yellow colour, and intensely bitter. It is not affected by infusion of galls, but the salts of iron and acetate of lead decompose it. It yields no ammonia by destructive distillation; hence the absence of azote is inferred.

Dr. Lane complains of the great tendency of inspissated ox-gall to become deliquescent, but this I have not found. There is by me, at this moment, a quantity which has been kept in a loosely covered vessel nearly two years, and it has not undergone the slightest change, except, indeed, that it has grown so hard as to require gentle warming before it can be removed from the jar. I can readily comprehend, if it be hermetically sealed in stopper-bottles soon after preparation, that further evaporation is prevented, and it will grow moist; but I think this may be always guarded against by keeping it in a moderately warm and dry situation, with a certain degree of exposure to the atmosphere.

Medical Gazette, July 11, 1845, *p.* 481.

[Mr. Blanch, a surgeon in Brixton-road, has tried both the *inspissated* and the *desiccated* ox-gall, and gives his testimony very decidedly in favour of the latter, as more efficacious, less nauseous, and not running together like pills of the former do.]

54 — *Remarks on Jaundice.*—[The opinion that jaundice is merely a symptom of disease, and not a disease itself, was formerly very prevalent, and is by many still considered so. M. Decaisne, in a memoir on this snbject, has examined the hypothesis of the dependence of the colour of the skin on the blood.]

He (M. Decaisne) infers, from his investigations, that although icterus depends often on the mixture of bile with the blood, whether in consequence of the presence of some obstruction to the course of the bile, or of its absorption;—yet it is not less true that in many cases it depends on the change of certain principles of the blood —perhaps from the predominance of yellow particles from obstructed excretion or secretion of the liver, or perhaps from the development of an abnormal yellow matter, formed in certain organs, and carried by absorption into the circulation. Many facts are adduced in support of this important distinction; and the author has been in consequence led to divide icterus into two classes. 1. Bilious icterus, which depends on a lesion of the biliary apparatus, and the presence of certain principles of the bile in the blood. 2. Essential icterus, which, as to its colour, is independent of the bile. The characters of the first class are these. 1. Skin thick, unctuous, wholly of a yellow colour, sometimes fixed, sometimes passing into a livid green. 2. The presence in the serum and urine of certain principles proper to the bile, which are capable of being recognised by the development of a green colour passing to brown by the action of nitric acid. 3.

Decoloration of the fæces. 4. Occasional bilious diarrhœa. In the essential icterus the skin never acquires so deep a hue; it is of a clear yellow or ochre colour, dry, and neither oily nor unctuous; the urine is clear, limpid, pale, not tinged green, nor is the serum discoloured by nitric acid; the fæcal discharges are not pale. The colour is strictly limited to the skin, or to a part only of the body. The author details many cases of local icterus, in which he not only failed to detect the presence of bile or any of its principles in the blood, but could not avoid noticing a modification of the capillary system at a particular point, where the abnormal secretion, upon which the colour depended, was determined.

In the cases of essential icterus, in which the entire surface of the body is coloured, we may recognise a cause analogous with an alteration in the blood, varying according to the modifications. Thus, the author attributes to phlebitis or purulent absorption the icterus which supervenes on surgical operations or wounds of the head; and also shews that the icterus of newly-born infants cannot be regarded as exclusively dependent on hepatic disease, or the passage of the bile into the blood.

The author could not detect any trace of bile in the blood of several persons who had died suddenly affected with this form of jaundice, though in other respects in apparent good health; although he found the liver very small, shrunk, furrowed, and reduced to a state of cyrrhosis, yet these changes were not to be attributed to the action of the principles of the bile by their presence in the blood, but were rather owing to a modification in the composition of this fluid.

The following are some of the conclusions which the author has drawn from his researches; those, at least, which belong to his views of the subject.

1. Icterus does not in all cases depend on a lesion of the liver or biliary apparatus.

2. It ought, in some instances, to be referred to an alteration, to a separation of the principles of the blood, probably of the yellow matter normally existing in that fluid, or to a change of the red colouring matter to yellow.

3. It is certain that the fluidity and alteration of the principles of the blood, in some persons affected with jaundice, shew a modification of these principles, and may be regarded as the cause of sudden death in persons thus affected, or becoming jaundiced after the bite of venomous reptiles.

4. In support of such a modification in the composition of the blood, may be cited the cases of icterus in newly-born infants, in whom these changes take place from the influence of external agents, sometimes from modifications of the circulation, the result of the change from fœtal to extra-uterine life.

5. The existence of local icterus can no longer be doubted, but the mode of its development is as yet unknown.—*Gazette Médicale.*

Medical Gazette, Aug. 15, 1845, *p.* 700.

55.—*Aperient Biscuits.*—The late Dr. Jos. Baader, who was, towards the end of the last century, one of the most successful medical men in large practice at Munich, ordered, when he wanted a drastic purgative, scammony resin in various combinations, in preference to other remedies. It is adopted for use in many cases, more especially as it has not the nauseous taste of jalap resin.

Scammony resin is prepared by digesting repeatedly powdered Aleppo scammony in alcohol, and precipitating the resin by means of water, as jalap resin is obtained from tincture of jalap. When dry, the resin is friable, transparent, and very soluble in spirit. If we drop a saturated solution on biscuit, the fluid is immediately absorbed, and thus forms a very good preparation for children. Dr. Warrenner observes, in the Medico-Chirurgical Journal, that Dr. Baader ordered a biscuit for adults, to which he had added sapo medicatus, and prepared according to this recipe:—℞. Scammoniæ, ʒj.; Saponis Venet., gr. v; Sacchari albi, gr. ix. M.

These ingredients were to be rubbed down to a fine powder, and mixed with one ounce of powdered biscuit. The mass was then to be kneaded, with the aid of a few drops of water, to a stiff paste, which was dried in the air, and weighed out into portions of ʒx. Of this mass ʒj. contains gr. vj. of scammony resin. Scammony resin is not unpleasant to take, rubbed down with sugar. Eight grains of the resin are sufficient to produce several evacuations in an adult; six grains are sufficient for an individual of about fifteen years; four grains for a child of seven or eight years; two grains for a child of two years. Scammony is one of the best anthelmintics.—*Repertorium für die Pharmacie.* Band xxxvii, Heft. 1.

Lancet, July 19, 1845, *p.* 75,

URINARY ORGANS.

56.—MODE OF ASCERTAINING THE PROPORTION OF SOLIDS EXISTING IN THE URINE.

By Golding Bird, Esq., A.M., M.D., &c.

[The proportion of solids excreted by the kidneys in a given time affords a series of indications in aid of diagnosis which, until the appearance of the work by M. Becquerel, had scarcely attracted any attention.

It is obvious that if we could ascertain the quantity of "real urine" excreted in a certain time in any given class of affections, we should then learn to what extent the kidneys are performing their depurating function. We should also obtain data by which we might ascertain pretty correctly the rapidity with which the effete tissues of the body are destroyed, under the influence of the oxygen of arterial blood, as well as the amount of nourishment acquired from the ingesta.

For this purpose we must obtain an accurate measure of the amount of urine secreted in a given time. We are still far from having any satisfactory information as to the amount of depuration performed by the kidneys in such time; that being influenced by the quantity of fluids drunk, the action of the skin, &c. Respecting this source of error, Dr. Bird says,—]

Notwithstanding the excretion of water is a most important duty of the kidneys, yet it must not be regarded as their essential one, as this fluid is exhaled abundantly from every other secreting surface and the emunctory of the body. The characteristic function of the organs under consideration must undoubtedly be regarded as the excretion of highly nitrogenised matters derived either from the wear and tear of the animal tissues, or from imperfectly assimilated food. Therefore, to obtain a measure of the amount of integrity of this great depurating function, we must not only measure the urine, but calculate with tolerable accuracy the amount of solid matters really existing in it. This can, of course, be effected by the evaporation of a given quantity to as dry an extract as can be obtained. The practical difficulties attending this process are familiar to every one who has ever performed the task; and moreover, the time required for its performance would preclude its being had recourse to sufficiently frequently to be of any real service. I have elsewhere noticed the objection to this mode, as well as the advantages it presents, and have calculated a table by which, on mere inspection, the quantity of solids in a pint of urine can be readily calculated.

Since the publication of this table, I have calculated another from Dr. Christison's formula ($\Delta \times 2{\cdot}33$), which shows at a glance the

Specific Gravity.	Weight of 1 fluid oz.	Solids in f℥j.—grs.	Specific Gravity.	Weight of 1 fluid oz.	Solids in f℥j.—grs.
1010	441·8	10·283	1025	448·4	26·119
1011	442·3	11·336	1026	448·8	27·188
1012	442·7	12·377	1027	449·3	28·265
1013	443·1	13·421	1028	449·7	29·338
1014	443·6	14·470	1029	450·1	30·413
1015	444·	15·517	1030	450·6	31·496
1016	444·5	16·570	1031	451·0	32·575
1017	444·9	17·622	1032	451·5	33·663
1018	445·3	18·671	1033	451·9	35·746
1019	445·8	19·735	1034	452·3	35·831
1020	446·2	20·792	1035	452·8	36·925
1021	446·6	21.852	1036	453·2	38·014
1022	447·1	22·918	1037	453·6	39·104
1023	447·5	23·981	1038	454·1	40·206
1024	448·0	25·051	1039	454·5	41·300

number of grains of solids in, and the weight of a fluid ounce of, urine, of every density from 1·010 to 1·040. Although ready to admit that this mode of calculating the quantity of solids is not susceptible of rigid accuracy, still, I maintain that the total error existing in a series of observations thus made will be far less than if actual evaporation of the urine was performed; and further, the large number of observations capable of being thus made by every one, amidst the fatigues of large practice, render it of infinitely greater value than a process which requires time and practical skill for its performance.

A glance at this table presents us with a mode of recollecting the quantity of solids existing in urine of different specific gravities, when the table is not at hand for reference—a piece of short memory of no small service in practice. Thus, if the specific gravity of any specimen of urine be expressed in four figures, the two last will indicate the quantity of solids in a fluid-ounce of the urine, within an error of little more than a grain, when the density does not exceed 1·030; above that number the error is a little greater. To illustrate this, let us suppose that we are called to a patient, the integrity of the depurating functions of whose kidneys we are anxious to learn. The quantity of urine excreted in twenty-four hours amounts, we will suppose to three pints, or sixty ounces, and the density of the mixed specimens passed in the time alluded to is 1·20; now we merely have to multiply the number of ounces of urine by the two last figures of the specific gravity, to learn the quantity of solids excreted; or $60 \times 20 = 1200$ grains of solids. If the table were at hand, the calculation would be more rigid, for we should then multiply 69 by 20·79, instead of 20; the product, 1247 grains, shews that by the former mode an error of 47 grains has been committed; an amount not sufficient to interfere materially with drawing our inductions by the bedside, and of course capable of immediate correction by referring to the table at our leisure.

From a large number of observations, it appears that the average amount of work performed by the kidneys in the adult, may be regarded as effecting the secretion of from 600 to 700 grains of solids in twenty-four hours. Although certain peculiarities connected with muscular exercise, regimen, and diet, as well as certain idiosyncracies of the patient, may influence this, yet if we regard 650 as the average expression of the number of grains of effete matter excreted in twenty-four hours by the kidneys, we shall not commit any very serious error. In calculations of this kind much latitude must be allowed, and it ought at least to be assumed that the kidneys may excrete fifty grains more or less than the assumed average, without exceeding or falling short of their proper duty.

In conclusion, says Dr. Bird, I may remind the reader, that in taking the specific gravity of the urine, the stem of the gravimeter should be sufficiently long to have every degree distinctly visible, and the degree immediately below the level of the surface should be chosen, to compensate for the errors arising from capillary adhesion of the urine to the glass. It is hardly necessary also to state, that

the temperature of the urine should be as near 60° F. as possible, and that in every case a specimen should be selected from the mixture of all the urine passed in twenty-four hours, and not from that voided at particular periods of the time.

Medical Gazette, May 23, 1845, *p.* 138.

67.—ON THE CHANGES PRODUCED IN URINE BY DISEASE

By E. J. Shearman, Esq., M.D., &c.

[Dr. Shearman commences this paper by stating that, before the effect of disease upon the urine can be ascertained, we must accurately understand the healthy secretion. He next draws attention to the manner in which animal heat is kept up. In the right side of the heart, the chyle mixes with the proteine of the venous blood (consisting of albumen, fibrin, and caseine.) Here an additional quantity of these three substances is added, together with the hydrochloric salts formed in the stomach; and the red globules, containing the carbonate of protoxide of iron. The venous blood is now conveyed into the lungs, surcharged with carbon from the food, a combustion of part of which takes place with the oxygen of the atmosphere, and is expired as carbonic acid gas, the rest forming fat and bile. Another portion of oxygen combines with some of the hydrogen, and is expired as watery vapour. The carbonate of iron of the red globules unites with another portion of oxygen and hydrogen, to form hydrated peroxide of iron. By this decomposition caloric is disengaged, which accounts for the heat of the lungs. The blood, now arterial, when in the capillaries, gives off, from the red globules, the carbon and hydrogen of the metamorphosed tissues met with in the capillaries, forming carbonic acid and water: the globules are thus reconverted into carbonate of protoxide of iron, whereby a sufficient quantity of caloric is disengaged to keep up the animal heat over the body; the proteine replacing, by the vital force, those parts which require it; and the nitrogen, hydrogen, and carbon of the decayed tissues filling up the vacuum in the capillaries caused by the vital force. The blood, again venous, charged with hydrogen, nitrogen, and carbon, goes, in great part to the liver, whence the carbon and soda of the bile; the remainder being again conveyed into the lungs with a fresh supply of albumen, fibrine, &c. from the thoracic duct.]

The above is the theory of Liebig, which easily accounts for animal heat. But since this has been before the scientific world, Professor Mulder, of Utrecht, has produced another very beautiful theory, not depending upon the chemical changes iron is supposed by Liebig to undergo. His theory is, that the iron is in the same state in both venous and arterial blood; that the proteine of the blood, when in the capillary vessels of the lungs combines with oxygen, and is converted into oxy-protein; changing the blood corpuscles of the

venous blood from transparent convex bodies into semi-opaque, double concave lenses, by which means they reflect more light, and make the blood look lighter—arterial blood. This combination of oxygen produces the caloric in the lungs. The blood being then circulated through the arteries, is conveyed into the general capillary system, where this oxygen of the arterial blood-corpuscles is given off to dissolve the old tissue; and the protein supplies its place. The blood-corpuscles lose their concave lens figure, and become again convex and more transparent, and give a darker colour to the blood, becoming again venous. This change of oxygen also gives off caloric sufficient to keep up the animal heat of the whole body.

Which of these theories is correct is not for me to determine; they both account for animal heat very satisfactorily.

We thus see that the kidneys are the organs destined to purify the blood of its decayed nitrogen, as the liver and lungs are of its decayed carbon; and the natural healthy secretion from the kidneys is urea and uric acid, combined with some of the salts which have been introduced into the blood by the food.

Oxygen is absorbed by the skin, combines with some of the hydrogen of the decayed tissues, and forms water, which is given out, along with the nitrogen gas taken with the food, in the form of perspiration; and the rest of the carbon of the decayed tissues is excreted in the fæces, with the insoluble salts, &c.

[Then, after an account of healthy urine, and the mode of its production, certain diseases accompanied by an abnormal state of the secretion are considered.]

Excessive indulgence in animal food, with too little bodily exercise, dyspepsia, and want of perspiration, are always attended by increase in the quantity of uric acid and urates.

Uric acid is frequently produced in great quantity in the bladder, by the hydrochloric acid formed in the stomach from disease of that organ; which, being absorbed into the blood, and secreted by the kidneys, forms hydrochlorate of ammonia, and deposits the uric acid.

In fever, and all diseases accompanied by rapid emaciation, the urine is of a high specific gravity, a dark brown-red colour from excess of urea, uric acid, urate of ammonia, and sometimes blood and purpurine. The lateritious sediment is urate of ammonia. And in extreme cases of acute rheumatism and hypertrophy of the heart, very large quantities of uric acid and urate of ammonia are commonly found.

In all acute diseases attended by great emaciation, inflammation, or disorganization, with unhealthy digestive organs, as long as the kidneys remain healthy, uric acid is secreted in abundance; but if the kidneys become diseased, as in morbus Brightii, diabetes, &c., then the secretion from the kidneys is perverted; part of the nitrogen remaining in the circulation, and the carbon, hydrogen, and oxygen, assuming the forms of albumen, sugar, hippuric and oxalic

acids, &c. In diabetes mellitus, when starch, sugar, &c., do not undergo the changes required to be converted into carbon or fat, the starch is converted into grape-sugar by oxygen, and the sugar is excreted by the kidneys.

In gout and rheumatism, urate of soda is found both in the urine and deposited in the joints and sheaths of the tendons.

When pressure on the renal veins exist to such an extent as to prevent the return of blood to the cavæ, as from a tumour, pregnancy, or diseased viscera, the elements of the blood are often poured out by the kidneys; and on examination, we find albumen, blood-discs, and the colouring matter of the blood, (hæmatosine.) And in granular diseases of the kidneys, and anasarca after acute disease of the skin—as scarlatina and extensive burns—albumen in large quantities is detected; but when the kidneys and skin regain their natural functions, uric acid and urea are again secreted in the place of albumen.

In all diseases of an anæmic or chlorotic nature, attended by languid circulation and extreme debility, independent of acute disease, deficiency of urea and uric acid is found, and no deposit takes place unless there is a very small secretion of urine. In hysteria there is a large flow of limpid urine, of low specific gravity, and of a green colour. In chlorosis, the urine is also of a low specific gravity, and green; and this green colour is owing to the mixture of cystine with hæmaphaein.

When the functions of the skin are impaired only, an excess of urea and urate of ammonia is always the result; and if, in this case, profuse perspiration occurs, the fluid goes off by that process instead of the kidneys, the specific gravity of the urine becomes increased, and deposits frequently take place in the bladder in consequence, forming calculi, owing to deficiency of fluid; but, if the skin is inperspirable, then the kidneys carry off the extra quantity of water, and the urine becomes lighter; but the animal acid (lactic or butyric) which ought to go off by the skin, is secreted by the kidneys, and combining with the ammonia or soda of the urates, produces uric acid.

When the functions of the liver are deranged, carbon is eliminated with hydrogen and cholesterine from the kidneys, which gives the peculiar colour to the urine in all cases of jaundice.

In organic mischief in the liver and spleen, or great congestion of the vena portæ, the urine is very red, purple, or copper-coloured, owing to purpurine and urate of ammonia; but when bile is circulating in the system from disease of the gall-ducts, &c. the urine is very brown, and easily shows bile by the proper tests. In contracted, hobnail, or cirrhosed liver, the extent of the disease may generally be measured by the quantity of purpurine in the urine; and usually in ascites from diseased liver we find purpurine; but in ascites from peritoneal disease we find none. The purpurine appears to proceed from the altered condition in the portal circulation.

When the liver and lungs are both so diseased as to prevent the proper quantity of carbon being carried off by their functions, hippuric acid is sure to be found in the urine.

In cases where organic mischief exists in the kidneys, the urine is frequently semi-solid when cold, and of a dark colour, like a mass of black currant jelly. And when hæmorrhage from some part of the urinary organs takes place, the urine is red, and shows quantities of blood-discs under the microscope. In fungus hæmotodes of the kidney, the urine looks like infusion of roses while warm, and like red currant jelly when cold, taking the form of the vessel.

During the progress of pneumonia, less carbon will be eliminated from the lungs, and therefore more will be in the urine and liver; consequently hippuric acid is often found. And in confined situations, where animals are obliged to breathe impure air, the globules of the blood are not sufficiently supplied with oxygen, carbon cannot be converted into carbonic acid in the lungs, and life could not go on unless the kidneys secreted more nitrogen and carbon in the forms of urate of ammonia and hippuric acid.

In hepatitis, the carbon is not converted into bile; and, as long as the other secretions are going on properly, the carbon which ought to form the bile is converted into fat and oil, and is found in the blood and urine.

We often meet with melancholy, highly-nervous, emaciated patients, simulating diabetes mellitus, but even more depressed in spirits, who merely complain of great debility and exhaustion, with some little pain in the back or loins, for which we find it very difficult to prescribe effectually. Dr. Golding Bird (to whom I am greatly indebted for much of the contents of this paper) has clearly shown that most of these cases are owing to imperfect assimilation in digestion, converting the urea of the nitrogenous part of the food into that state which is secreted by the kidneys as oxalic acid and ammonia instead of sugar, which, combining with the lime of the phosphates, produces the oxalate of lime diathesis; and it is to the derangement of the stomach, duodenum, and liver, that we must look for success in the treatment of these cases. I have met with two patients of this description latterly, whose cases would have puzzled me very much before I read Dr. Bird's paper.

Alkaline Urine.—When, from any cause, as the consequence of wear and tear in old age, excess of study, or great excitement of the brain, an injury to the spine, or stone in the bladder, the kidneys or bladder are deprived of their natural supply of nervous power, the elements of urea combine with the elements of water, and are converted into carbonate of ammonia, which, by irritating the mucous membrane, and neutralizing the solvent phosphoric acid, throws down the triple phosphates, and phosphate and carbonate of lime, and renders the urine alkaline. Thus we find, in almost all cases of long-continued calculi in the bladder—let the calculus be composed of what it may—that the urine is strongly alkaline, ammoniacal, and deposits phosphate of lime, which sticks to the bottom of the vessel like birdlime. The fusible calculus is composed of the ammonio-phosphate of magnesia and phosphate of lime.

In persons who are confined to very sedentary habits, with great

mental exertion, for a length of time, and then obliged to use violent muscular exercise for a few days, as clergymen with small livings, lawyers, and schoolmasters, alkaline urine, with abundance of earthy phosphates, is usually the consequence; and this unnatural secretion brings on a degree of debility not easily accounted for in any other manner.

In irritative dyspepsia in gouty habits, the urine often contains the phosphates in abundance; and whenever the triple phosphates, with alkaline urine, are deposited for a length of time together, both in the night and morning urine, accompanied by emaciation, there will always be found organic disease, either in the digestive organs, kidneys, or bladder, if not in the spine.

Dr. Golding Bird gives the following rule respecting the phosphates, which will be found very useful in practice:—That where the presence of phosphates is only found in the evening urine, organic disease is rarely the cause of it; but where they are found equally in the morning and evening urine, you may be sure organic disease exists.

In bad cases of typhus fever, the urine is frequently ammoniacal towards the close of the disease, the nervous system of the kidneys being too depressed to secrete urea, and its elements being converted into carbonate of ammonia, just as they would be in common chemical decomposition out of the body.

During retention of urine from diseased prostate gland, stricture of the urethra, or where a catheter is obliged to be worn, the urine is always alkaline, owing to irritation in the mucous membrane.

These observations might be carried to an almost indefinite extent, but enough has been remarked to convince any one of the value of observing the chemical nature of urine in disease. To arrange these cases scientifically would take up too much time on this occasion.

3. We will now endeavour *to point out the easiest modes of detecting the contents of diseased urine*, under the following divisions—viz., 1. Crystalline contents; 2. Colouring matters; 3. Organic deposits.

The only necessary apparatus for these experiments are, a urinometer, test tubes, watch glasses, spirit lamp, and a good achromatic microscope. The re-agents are well known to the profession.

CRYSTALLINE CONTENTS.

Urea.—When this is in excess, the urine is of a high specific gravity, and generally of a reddish colour By adding an equal quantity of nitric acid in a watch glass, it crystallizes at the bottom very soon as nitrate of urea; when the urea is in excess, it soon becomes solid. By combining with two atoms of water, urea is converted into carbonate of ammonia; and this accounts for urine becoming alkaline and pungent soon after it has cooled. A little excess of mucus aids this process.

Uric acid or *Lithic acid* is the substance of which the greatest number of urinary calculi is composed, The urine is high-coloured; specific gravity generally above 1.020, and contains an excess of

urea. Uric acid, acting on the phosphate of soda and ammonia, (or microscomic salt,) existing in urine, is decomposed; urate of ammonia is formed, and phosphoric acid set free, which is the cause of the acid re-action of urine. So that uric acid is usually found in the form of urate of ammonia. To detect it, warm the urine containing urate of ammonia in a watch glass, and the uric acid becomes deposited at the bottom of the glass, and when viewed by the microscope is seen crystallized in red rhombic prisms. It is familiarly known by the names of yellow and red sand. Heat does not dissolve it. Pure uric acid is only soluble in 10,000 parts of water at 60°, and is insoluble in alcohol. Liquor potassæ dissolves it, forming urate of potass. Hydrochloric and acetic acids have no action. It is dissolved by nitric acid; and by evaporation, a pink colour (becoming a rich purple on being held over the vapour of ammonia,) is produced. This is purpurate of ammonia. Exposed to heat in a platinum spoon, it burns, evolving an odour of bitter almonds, and leaving phosphate of soda and lime behind.

Hippuric Acid.—This is rich in carbon, and found plentifully in the horse and cow. Evaporate the urine and syrup, add excess of hydrochloric acid; uric acid and hippuric acid will then be separated and fall to the bottom; pour off the supernatant fluid, and wash in cold water; boil the residue in alcohol, in which hippuric acid is soluble, and uric acid is not, from which it gradually crystallizes in delicate coloured needles, very visible under the microscope. It is soluble in four hundred parts of water at 60°.

Urate of ammonia.—This is the *lateritious sediment*, soluble in 480 parts of water at 60°. The colour of this urine is from pale to crimson; specific gravity from 1.012 to 1.025; it often contains floating masses. The deposits are from fawn colour up to purple; they never appear until the urine has cooled, and disappear by heat. Liquor ammoniæ and liquor potassæ dissolve them. The floating masses disappear by heat, contrary to albumen. When it becomes turbid from a drop of nitric acid, the microscope will show crystals of uric acid. A drop of urine containing urate of ammonia, examined on glass by the microscope, shows an amorphous powder, composed of myriads of minute globules; but add a drop of hydrochloric acid, the muddiness disappears, and crystals of uric acid will be seen, the ammonia having deserted the urate to combine with the acid. The colour of urate of ammonia is always owing to its union with purpurine. It is quite white when pure.

In examining numerous large deposits of urate of ammonia under the microscope, I have always found, on the addition of weak nitric acid, an appearance of globules so like pus, but more coloured, that I cannot avoid mentioning it particularly, for I have never seen it named by any author; and it is so constant in its appearance, that I am led to conclude it depends on some chemical combination of the animal matter of the urea with the nitrogen of the nitric acid.

Urate of soda.—Very rare, except in gouty diathesis, and fever

treated by carbonate of soda. Heat does not dissolve the deposit so quickly as it does urate of ammonia.

Uric oxide, xanthic oxide.—Very rare; supposed to have some connection with the yellow colouring matter of the urine, (hæmaphæin.) It resembles uric acid if noticed inattentively. Colour is salmon or cinnamon tint, not so red as uric acid. The deposit caused by the uric oxide is a grey powder to the naked eye, but under the microscope resembles small particles of yellow wax. It is insoluble in solution of carbonate of potass, whereas uric acid is soluble. Ignited in a tube, it does not yield urea, and uric acid does.

Cystine.—This is very rare, and contains 26 parts in a hundred of sulphur. This urine looks like diabetic urine; but is of a very low specific gravity. It smells like sweet brier when fresh, but soon putrefies, and evolves sulphuretted hydrogen. It is usually found in scrofulous habits. Cystine forms a deposit like the pale variety of urate of ammonia; but, unlike that deposit, it is unaffected by heat, and it very slowly dissolves on the addition of nitric or hydrochloric acids. It is soluble in the mineral and insoluble in the vegetable acids, Soluble in ammonia, the fixed alkalies, and their carbonates, but insoluble in carbonate of ammonia. By heating on platinum foil, it burns with a disagreeable odour. An evaporated solution of cystine in ammonia under the microscope, crystallizes in six-sided laminæ very distinct. It requires caution to distinguish this from chloride of sodium in urine, which naturally crystallizes in cubes, but when combined with urea assumes an octahedral shape. The ammoniacal solution stains a white glass bottle black, from the combination of the sulphur of the cystine with the lead of the glass.

Oxalate of Lime.—This salt was considered very rare in the urine; but Dr. Golding Bird has proved, in his lectures in the Medical Gazette, that it is even more common than the earthy phosphates. The urine is acid, has a naturally healthy appearance, the specific gravity from 1.015 to 1.025, generally with some epithelial scales, and always with a large quantity of urea, uric acid, or urates. To discover the oxalate of lime, set aside the chylous urine for many hours in a glass vessel; decant the upper eight-tenths of it; pour a little of the bottom into a watch-glass, warm it, and the oxalate will fall to the bottom; remove the top part of the fluid with a pipette, and under the microscope we find the beautiful transparent octahedral crystals of oxalate of lime; collect and ignite the crystals on platinum foil; oxalic acid is decomposed, and carbonate of lime left, which dissolves in dilute nitric acid, with effervescence. These crystals are unaltered by boiling in acetic acid or solution of potass. They dissolve without effervescence in nitric acid.

Ammonio-phosphate of soda, or microscomic salt.—This is usually decomposed by uric acid in the bladder: urate of ammonia is formed, the phosphoric acid being set at liberty, which becomes the source of the natural acidity of the urine. The very small

proportion of soda combines with uric acid, forming urate of soda.

Ammonio-phosphate of magnesia, or *triple phosphate*, and the *phosphate of lime*, are nearly insoluble in water, unless it contains a very small proportion of any acid, or hydrochlorate of ammonia; consequently, in healthy urine these earthy phosphates are held in solution by the phosphoric acid. This urine is generally pale, whey-like, plentiful, and of low specific gravity, 1.005 to 1.015. When the urine is alkaline from disease, these salts deposit, and are always white, unless coloured with *blood*. They are soluble in weak hydrochloric acid, and insoluble in ammonia and liquor potassæ. Heat agglomerates the deposit into masses, but produces no other change. By adding a small quantity of ammonia to urine containing any earthy salts, deposits of triple phosphates take place, which, under the microscope, are seen either in minute white triangular prisms, stellæ, or acicular prisms, or foliaceous crystals, and are very easily detected. These disappear on adding a drop of any acid. When the urine is alkaline, these deposits are abundant.

Phosphate of lime is never found in crystals. It is a very opaque sediment, and a drop examined by the microscope between plates of glass, appears white by reflected, and yellow or brown by transmitted light.

To distinguish the deposits of the triple phosphates from pus and blood, nothing but their appearance under the microscope can be depended upon. From mucus, add hydrochloric acid, which will dissolve the phosphates, but *not* the mucus. From albumen, add nitric acid, which dissolves the phosphates, but deposits the albumen.

Carbonate of lime is sometimes met with as a deposit in alkaline urine. It is formed from the decomposition of phosphate of lime by the carbonate of ammonia. To discover it, wash the deposit well with water, which dissolves the carbonate of ammonia, and add any dilute acid, which will dissolve the carbonate of lime with effervescence. Examined by the microscope, they appear beautiful small transparent spheres, like globules of glass, and strongly refract light.

Silicic acid has very rarely been found as a deposit in urine, but it is often used by impostors, which it is necessary to be aware of.

COLOURING MATTERS.

Purpurine.—This is a substance of great consequence to become acquainted with, as its presence always indicates serious functional or organic mischief in some of the organs connected with the portal circulation. It has been considered as the same substance as purpurate of ammonia, or the murexid of Liebig; but Dr. G. Bird has clearly proved it to be a substance *sui generis*. Purpurine is quite soluble in alcohol; purpurate of ammonia is insoluble. It always combines with urate of ammonia, causing that deposit to vary in

tint from a mere flesh colour to the deepest carmine, and is often mistaken for blood. To distinguish it, solve the purpurine in alcohol, examine the rest under the microscope, and the absence of blood-discs will prove it. Of course, the appearance under the microscope is that of amorphous red urate of ammonia. If a small quantity is suspected, add hydrochloric acid to the warmed urine, and a colour, varying from lilac to purple, will immediately be produced, if purpurine be present. By evaporating urine containing it to a syrup, and digesting it in alcohol, we obtain a purple tincture, which colour is heightened by acids, and diminished by alkalies. The specific gravity of urine containing this substance varies from 1.015 to 1.030; it is not altered in colour by boiling; nitric acid added to it often produces a copious deposit of uric acid, often mistaken for albumen.

Cyanurine gives a blue colour to urine; it deposits as a blue powder, which may be separated by filtering; freed from mucus, urates, and phosphates, by washing with water, and digested with hot sulphuric acid, from which it must be carefully precipitated by magnesia; or it may be obtained by boiling the blue deposit in alcohol, and evaporating it to dryness. It is insoluble in water; moderately soluble in boiling alcohol; soluble in diluted acids, which become brown or red. The solution, in sulphuric acid, leaves, by evaporation, a carmine-red extract, soluble in water. It is precipitated, unchanged, from an acid solution by ammonia, lime-water, and magnesia. It forms a red colour by dissolving in a hot solution of alkaline carbonates, and a brown one in pure alkalies. Distinguished from indigo by not sublimating when heated in a tube, and from percyanide of iron by not yielding sesquioxide of iron when treated with carbonate of potass: very rare.

Indigo gives a dark blue colour, which deposits by repose in urine, and may be collected on a filter. It dissolves in strong sulphuric acid, forming a purple solution. Nitric acid converts it into nitropicric acid; carefully heated in a tube, it sublimes in purplish-red crystals. The best test is, to heat the deposit in a tube, with a little grape-sugar, in a mixture of equal parts of alcohol and liquor potassæ; the blue colour disappears, and it becomes yellow. By agitation and exposure to the air it becomes red, and at last green, from the reproduction of blue indigo. This is also rarely met with.

Percyanide of iron, or prussian blue, now and then occurs when iron has been taken some time as a medicine, by combining with cyanogen—the result of the re-arrangement of the atoms of urea. It consists of a blue powder, insoluble in water and alcohol. Digested with liquor potassæ its colour is destroyed, sesquioxide of iron being liberated, and a yellow solution of ferrocyanide of potassium being formed. This solution is precipitated blue by sesquisalts of iron, and brown by sulphate of copper.

Melanourine and melanic acid are rarely found in urine; their chemical composition is not yet sufficiently known.

Hæmaphaein is the yellow colouring matter of the urine, which gives to urate of ammonia its yellow colour.

Cholesterine is a substance very rich in carbon, is supposed partly to give the colouring principle to the bile, and is often detected in urine in the form of bile.

ORGANIC DEPOSITS.

In addition to the former substances found in urine, the elements of blood, albumen, hæmotosine, and blood-discs, pus, mucus, organic globules, epithelium, milk, fat, sugar, bile, spermatozoa, and vibriones, are often discovered. Very few remarks on each of these substances may suffice.

Blood.—Urine containing blood coagulates into blackish masses, like currant jelly, and often comes from the urethra in pieces like leeches. The urine containing the liquor sanguinis coagulates spontaneously, and looks like blanc mange, owing to the fibrin in it. To detect blood, boil and filter the urine; brown coagula of hæmatosin and albumen will remain on the filter. Add liquor potassæ, and if blood be present, a greenish solution will pass through, from which white coagula of protein may be precipitated by hydrochloric acid.

Urine containing blood becomes darker in colour by boiling, but not so if the colour is owing to purpurine. Uric acid is *not* affected by heat, and is distinguished by the microscopic character of the deposit; bile, by its characteristic tests; hæmatoxylon, by the dark precipitate produced by sulphate of iron, and absence of coagulation, by heat.

The blood-corpuscles, particles, discs, or globules, are shown most distinctly by the microscope, as little rings; but, by minute examination, are really double concave discs, of a uniform size, and yellow colour.

Albuminous urine is clear, straw-coloured; sometimes a dingy red, from blood, and then it contains less albumen. Its specific gravity ranges from 1.008 to 1.012. It may be detected by heat, nitric acid, bichloride of mercury, ferrocyanuret of potassium with acetic acid, and caustic potass.

1. Put the urine into a test tube, hold it over a spirit-lamp, and, if the urine is acid, and contains albumen, it will become opaque without boiling; and the more albumen it contains, the more solid will the urine become as the heat is increased. If the precipitate is owing to the earthy phosphates, it disappears by adding any acid. Sometimes heat, long continued to ebullition, will produce a deposit from urate of ammonia; but this only occurs from the long continuance of the ebullition. If the urine is alkaline, heat will not deposit albumen, but nitric acid will.

2. By adding *strong nitric acid* to albuminous urine in a test tube, an immediate coagulation of albumen occurs; but this happens sometimes in patients under the influence of copaiba, cubebs, and other resinous drugs; and is distinguished from albumen by not being deposited by heat.

3. A saturated solution of *bichloride of mercury* precipitates albumen a dense white.

4. *Ferro-cyanuret of potassium* gives a flocculent precipitate (white) with albuminous urine, to which a few drops of acetic acid has been added.

5. A solution of *caustic potass* produces a white precipitate of gelatine.

Pus.—This urine is generally acid or neutral, and is slow to become putrid; by repose, pus falls to the bottom like cream, of a greenish colour, not hanging in ropes like mucus, and mixing with the urine on agitation, acetic acid having no effect on it. On mixing the deposited pus with an equal quantity of liquor potassæ, a dense, semi-opaque, gelatinous mass is formed, which can scarcely be got out of the tube. Albumen can always be detected in the urine containing pus. Agitated with æther, fat is dissolved, which, on evaporation, is found in globules. Alkaline urine requires great care in detecting pus. Phosphatic deposits sometimes resemble pus very closely; but by microscopic examination the pus particles are distinctly seen floating in liquor puris, which is coagulated by heat and nitric acid; they are white, round, roughly-granulated outside, and much more opaque than blood-corpuscles. By adding a drop of acetic acid to them while under the microscope, the interior of the particle becomes visible, and is found filled with several transparent nuclei. The earthy phosphates give their usual crystalline appearance.

Mucus.—Urine depositing mucus is generally alkaline; it soon putrefies—becoming almost ammoniacal in the bladder. It is very viscid and tenacious, forming a continuous rope when poured from one vessel to another. If the upper stratum of urine is acid, the mucus is always alkaline. Mucus will not mix with urine as pus does.

Acetic acid corrugates the mucus into a thin, semi-opaque membrane, which at once distinguishes it from pus. Mucous urine contains no albumen. Æther dissolves scarcely any trace of fat. When the urine contains a large quantity of earthy phosphates, it is difficult to distinguish between pus and mucus, except by the microscope. The microscopic appearance of mucus granules is very like pus, but they float in a viscid glairy fluid, (liquor muci,) which does not coagulate by heat or nitric acid.

Organic globules, large and small, can only be detected by the microscope; they are larger than pus and mucous granules, and have a darker colour. They are very common in albuminous urine.

Epithelium.—These are a part of the mucous membrane of the genito-urinary organs. Under the microscope, they appear like oval or angular flattened cells, with a centre nucleus.

Milk.—In utero-gestation, I have found milk in the urine: and Dr. G. Bird gives very clear and satisfactory proofs of its frequent

occurrence. To detect it, allow the suspected urine to repose in a cylindrical vessel, exposed to the air, for several days, and the milk (kiestein) will rise to the surface in a fat-like scum, remaining permanent for three or four days.

Fatty urine has the appearance of diluted milk; it often spontaneously gelatinizes, like blanc mange, on cooling. This is called chylous urine by Prout. On agitating the fresh urine with an equal bulk of æther, the fat is dissolved, and when the æther is evaporated in a watch-glass, it leaves globules of oil. The urine always contains albumen.

Spermatozoa.—When in the acid urine of a man there exists a cloud, which is not cleared by nitric acid or heat, this may be suspected. Allow the urine to subside in a conical vessel; decant the top, and view a drop of the bottom under the microscope. These minute beings will be easily detected as minute ovate bodies, with a bristle-like tail; which is more distinct when viewed dried on the glass.

Bile often tinges the urine a deep brown colour. In addition to the old method of dipping in a bit of linen, and drying it, the following are the best modes of detecting bile:—

Pour a small quantity of urine on a white plate, so as to form a very thin layer. Carefully add not more than a couple of drops of nitric acid in the centre; an immediate play of colours, in which green and pink predominates, results.

Add to a few drops of the urine, on a white plate, a little strong sulphuric acid; when the mixture becomes hot, add a drop of saturated solution of lump sugar. It immediately assumes a fine purple colour.

Sugar is the principal ingredient in the urine of diabetes mellitus. It is generally clear, of a lemon colour, secreted in large quantity, and of the specific gravity of from 1.030 to 1.055. When this urine is left in a warm place, a scum forms on its surface, which, if examined by the microscope, consists of what are called torulæ; and if put into syrup, grow so quickly as to be seen under the microscope almost increasing. The sugar of this urine is like the grape sugar. The following are the best tests:—

1. Evaporate the urine to an extract; digest it in hot alcohol; when cold, allow the tincture to evaporate spontaneously in a cupping glass, when white granular masses of sugar will crystallize on the sides of the glass.

2. *Trommer's test.*—Add to the suspected urine, in a large test tube, just enough solution of sulphate of copper to make it a faint blue, a deposit of phosphate of copper falls; add liq. potassæ in great excess, hydrated oxide of copper first falls, which redissolves in the excess of alkali, forming a blue solution like ammoniuret of copper. On gently heating the mixture to ebullition, a deposit of red oxide of copper falls.

3. *Capezzuoli's test.*—To the urine, in a conical glass vessel, add a few grains of blue hydrated oxide of copper, and render it alkaline by the addition of liquor potassæ. If sugar be present, it assumes

a reddish colour, and in a few hours the edge of the deposit of oxide becomes yellow, which gradually extends through the mass, from a reduction of the oxide to the metallic state.

4. *Moore's test.*—Add to ʒij. of the suspected urine, in a test tube, half its bulk of liquor potassæ; heat it over a spirit lamp, and keep it boiling for a minute or two; the pale urine will become an orange brown, or bistre, according to the proportion of sugar present.

Vibriones are minute animalcules, occasionally developed in urine, which is pale, neutral, and of a low specific gravity, and speedily becomes putrid. Under the microscope these animals appear minute linear bodies, not so long as the diameter of a blood-disc; they are alive, and move, in an oscillatory manner, in fresh urine.

4. To recapitulate.

It is a very easy task, after a very few trials, to discover, in a few minutes, the contents of almost any ordinary specimen of urine; and, without this knowledge, it is quite impossible to become acquainted with the changes which are constantly occurring in the urinary organs.

For instance, you are called to a patient complaining of excruciating and deep-seated pain in the abdomen, shooting down the thigh, which resists the usual soothing mode of treatment. Examine the urine, and you may there find blood, pus, oxalate of lime, uric acid, or phosphates. This at once explains the nature of the malady, and you can confidently tell your patient that he has a small calculus of a certain description in the ureter, and your treatment is no longer empirical. Or you may be consulted by a person with various anomalous symptoms of a cachectic nature, which you would find it impossible to give a name to unless you examine the urine chemically, when you discover either albumen, sugar, or oxalate of lime excreted; and this at once explains the case.

A patient consults you, much reduced in strength, depressed in spirits, and emaciated, his appetite being good, and digestive organs healthy, as far as you can discover, there being no evident cause for such a state. Take the specific gravity and quantity of the urine. If it is high, without deposit, and the quantity not great, add nitric acid to it in a watch-glass, and you will most likely discover a large quantity of urea, sufficient at once to account for the symptoms; or if the quantity of urine be large, you may discover sugar.

During the course of febrile and inflammatory diseases, urate of ammonia is generally deposited. But if the symptoms increase, instead of diminish, under this deposit, examine it, and perhaps you may find the deposit to consist of phosphates and purpurine, and the urine alkaline. This will at once warn you to be watchful of your patient, and cautious in your prognosis.

Suppose you have a surgical operation to perform on a patient apparently out of health, but with no decided disease. If, on examining the urine, you find albumen, oxalate of lime, or the ammonio-phosphates of magnesia in abundance, you may feel assured the person is in an unfit state to bear any operation; and by waiting,

and attending to his general health, you will feel more confidence in the successful event of such an operation.

Although Sir B. C. Brodie, Dr. Prout, and other late writers on diseases of the kidneys, have laid great stress on the cachectic state of the system, accompanied by alkaline urine, it was reserved for the splendid discoveries of Bright and Bird to elucidate the real value of these pathological changes.

The little that I already know of this subject has convinced me that, when properly studied by medical practitioners, they will find in it as true a diagnosis to the diseases of the abdominal and extra-abdominal viscera, as percussion and auscultation are to the diseases of the chest.

Lancet, May 17, 1845, *p.* 54.

[In a subsequent note Dr. L. corrects an error, respecting cholesterine into which he has fallen, where he states that it is *supposed partly* to give the colouring principle to bile, and is often detected in the urine in the *form* of bile. The opinion was expressed dubiously, because he was well aware that some doubt existed on the subject. He still thinks that when bile is discovered in urine, the colouring matter, whatever it may be, is in combustion with cholesterine. In conclusion, he asks the correspondent who corrected him if *he* can tell what the colouring matter of bile *is?*

58.—ON THE CURE OF DROPSY, &c. BY ISSUES.

By H. Kennedy, Esq. A.B., St. Thomas's Dispensary.

[Dr. Kennedy prefaces his paper by remarking that, at one period or other, the majority of persons owe the preservation of their health to some natural form of issue. And as an illustration of his meaning, instances the frequent eruptions in childhood arising from a disordered state of the system, or at a later period, the periodical bleeding from piles, the occurrence of epistaxis, &c.

On the same principle he would recommend the artificial formation of an issue in cases of ovarian dropsy, cancer, and some other diseases. He has found benefit from it also in cases of chronic hydrocephalus.]

In what manner issues act it is not very easy to determine. Their effects seem to be out of all proportion with the amount of discharge; otherwise we might be inclined to suppose that the system, by their means, got rid of morbid matter, which, if retained, would prove injurious. Possibly this may be true in part, but it is really curious to observe what a very trifling discharge, as regards quantity, will suffice to relieve the system: any one who has seen a case of phthisis complicated with fistula must have observed this: or the still more trifling discharge which takes place from a single spot of tetter situated on the front of the tibia, and which appears

in itself sufficient to ward off apoplexy or paralysis, judging from the results, if suddenly cured. It would appear, however, as if the formation of so small quantity of pus as a drachm in the twenty-four hours is quite enough at times to strain, as it were, the constitution. So much is this the case that care should always be taken to see that the issue is not producing an undue effect, and thus is adding to the mischief it was intended to remove. Here, as in every thing else connected with medicine, a proper judgment must be exercised, and the practitioner must be guided by the peculiar circumstances of each individual case.

[In illustration, the following with other cases is mentioned:]

Five years since, a young lady, aged, at that time, six years, was put under my care. I was informed that from two years of age she had been subject to swellings forming in different parts of the body; on the lower limbs, the wrists, one elbow, but, above all, in the neck. This latter part was literally seamed from ear to ear. Though these swellings were always forming in one part or other of the body, still they were particularly troublesome in the spring-time of each year: no matter what treatment was adopted they always went on to form abscesses, and ultimately to burst; and in this way it was that the neck had become so disfigured. She had had very good advice, and in the proper season had been sent to the sea-side for the bathing; but still there had been no change for the better. A glance was enough to tell any one that the patient was of the strongly-marked strumous diathesis. She had light hair, blue eyes, and a very fine clear skin; and her disease was evidently one of the hundred forms under which scrofula exhibits itself, when it affects the external parts of the body. Reflecting on all that had been done for the patient, without benefit, I came to the conclusion that something which was capable of producing a decided change in the constitution was the only means likely to get rid of such an affection as has been described. With this impression I advised an issue to be put in the arm, and having got Mr. Carmichael's sanction to it, this was done. For about one year after this there was at times a tendency in some of the glands to swell, but none of them ever went on to suppurate; and for the last four years there has been a steady improvement in every respect. Any one who had seen the neck at the two intervals would scarcely have believed that such a change for the better could have taken place It is scarcely necessary to add that other means besides the issue were attended to.

[Dr. Churchill has seen cases of laryngismus stridulus cured by this plan, and Mr. Neville of Dublin, has also observed such.]

Dublin Journal of Medical Science, Sept 1845, *p.* 31.

59.—REMARKS ON ALBUMINURIA.

By C. J. B. Williams, Esq. M.D., F.R.S., &c.

[Dr. Williams in a clinical lecture on Albuminuria, speaking of a case of delirium tremens where this symptom, together with softening of the brain, and atrophy of the upper portion of the cervical medulla were present, whilst there was rather an absence of bloody spots in the brain, and the patient died from exhaustion, says that, "such state corresponds very much with the notions I have entertained of that disease, uamely, that it depends on an undue excitement of the nervous function, and the sensorial function particularly; but without permanently increased vascular action, or any thing approaching to inflammation."]

In some cases the excitement may lead to inflammation; it may be complicated with inflammation, but it is not essentially so. This excitement if carried on long, leads to exhaustion, not only of function, but of structure also; we may illustrate this by the analogy of muscle. It is well known that continued exercise in a muscle, if it be alternated with rest, leads to an enlargement, an increase of function, incressed strength, increased structure, growth and development. But if it be not alternated with rest, that increased exertion leads to atrophy. So, I believe, it is with regard to cerebral excitement; if excitement of the brain is continued so long, so intensely, as to supersede the alternation of natural rest, then it leads to exhaustion of the function, and ultimately to wasting of the structure.

[In another case of albuminaria, there was also heart disease, from which Dr. Williams was led to form an unfavourable prognosis.]

All cases of morbus cordis to the extent in which it occurred in this patient are dangerous; but not so much so as is commonly supposed. Morbus cordis in by far the greater number of instances becomes complicated with other affections; and as a general rule, singly it does not destroy the patient, though it may do so in extreme cases. It may, as a chronic disease, attain an enormous amount without destroying life, and indeed the tendency to produce that result is usually proportioned to the extent to which it interferes with the function and structure of other organs, more particularly of the lungs, the liver, and the kidneys, and the latter most of all. Now this fact is the more important, because it shows that by removing or preventing these complications, we may avert the fatal termination for a considerable time. The ultimate result of heart-disease, where it increases very much, is to induce albuminuria. At first the albuminuria is a mere temporary or functional state, and it may be said to be induced by a great amount of congestion during the severe embarrassment of the circulation, caused by a transient aggravation of the heart disease, and this may be carried off under proper treatment. It is where the urine becomes permanently and increasingly albuminous, and where with

the presence of albumen there is a deficiency of the natural constituents of the urine, so that the excretory function of the gland is reduced, that the approach of the fatal termination of the heart disease is announced. It is was from the fact that the urine was albuminous, and remained constantly so, that I formed an unfavourable opinion of the case. Although the heart disease was less in amount than in some other cases which we have seen here, and which have gone out of the hospital relieved for a time, yet, having this complication, we had no hope that she would be materially relieved; and the result justified this prognosis.

[The occurrence of these cases in groups, at one time of a favourable character, at another dangerous, is remarkable. Dr. Williams considers this to depend on changes in the weather, and says.]

"We know as a matter of fact that sudden changes of weather are peculiarly apt to develop this disease either in the first instance as a new affection, or to aggravate it where it had existed before—chronic cases become aggravated into acute attacks. Hence cases of albuminuria are met with very commonly in the spring and autumn, at which times of the year changes of the weather are sudden and extreme. At the end of March and the beginning of April this year the changes were remarkable; the heat of the sun was considerable during the day, and at night the wind was bleak, and the cold most intense. To this cause I have no hesitation in referring the prevalence of this and some other diseases.

I might point out a chemical mode in which sudden changes of temperature may develop diseases of the kidneys, more particularly inasmuch as the kidneys appear to act vicariously with the skin and the liver, in the process of the purification of the blood. But we have not time to dwell on this dubious point of pathology. Changes of temperature, sudden transitions from cold to warm, from warm to cold, operate mainly by affecting the general circulation, by causing a great internal congestion, driving the blood from the surface, and thus in an undue degree taxing weak organs. There are a number of facts which bear on this point, in connexion with albuminuria as a temporary disease, or a permanent affection arising from congestion of the kidneys. For some of these I must refer you to my work on the Principles of Medicine, in which I have endeavoured to show that congestion is adequate to produce albuminuria, and ultimately granular or cacoplastic degeneration of the kidney. There is congestion in the first instance, and impaired power in the organs as the result of that congestion; the congestion continuing, an interstitial deposit takes place, which alters the structure; and this more when there is present a cacoplastic state of the blood.

The matter effused in each of these cases differs. There is deposit of a more or less plastic kind: and it varies also in quantity. In one instance it may be more plastic and abundant, and the result of that is hypertrophy, enlargement, leading to a considerable increase of den-

sity in the structure of the kidney; and I have met with several cases of that kind. In other instances it is less plastic. When first thrown out it is soft, causing an enlargement of the natural cortical structure, a softening of its substance, a coarseness in its texture which is very remarkable; but as time goes on, and the disease becomes chronic, it takes different turns according to the condition of the plasma. In common cases it becomes granular, and we see the surface of the kidney is rendered rough from the irregular contraction of the deposit. In other instances it is thrown out in considerable quantity, and appears mottled, yet it does not become granular. We had an instance of this kind in the case of Mayhew. His kidneys presented cacoplastic degeneration, not granular on the surface as it was in the other cases. This, I believe, is connected with the fact that there is more fatty matter in this kind of cacoplastic deposit. Dr. Quain examined some of the matter found in the cortical portion of Mayhew's kidneys, and it presented an unusual quantity of opaque globules, which are in fact fatty globules, and demonstrate that the cacoplastic deposit was here more fatty than usual. I believe that when this deposit abounds in fat it is capable of retaining a comparatively uncontracted smooth state; in other cases, where deficient in fat, it leads to contraction, and to induce atrophy in the contiguous parts

In several instances you will observe that the liver exhibited the same change, though in a much less degree, as the kidneys; but still enough to identify the two. In Mayhew the liver was much diseased, and had that opaque, muddy, greasy kind of cacoplastic deposit to which I have just alluded. The same thing was observed in some degree in Crouch.

[Proofs of a cacoplastic state of the system are also found connected with granular degeneration of the kidneys, in the existence of tubercles in the lungs, and a soft and atrophied state of the brain and spinal cord. Not unfrequently too there is hepatization, consisting of a soft species of lymph, having little plastic power among the particles.]

You are aware that I have insisted upon the fact that this deposit is little under the influence of absorption. As it is difficult of organisation so it is difficult of absorption, and constitutes a bad, because a persistent product of inflammation, closely allied in character to tubercle.

Medical Gazette, August 1, 1845, *p.* 573.

60.—ON DROPSY FROM HEPATIC AND RENAL DISEASE.

By C. J. B. Williams, Esq., M.D., F.R.S. &c.

[The patient on whose case the following remarks are made was fifty-eight years of age, had probably been a hard drinker, and had had an attack of erysipelas four years before, when he lost

a large quantity of blood. This reduced him exceedingly; but he partially recovered, however, and went into the country An erysipelatous eczema, however, made its appearance, under which he suffered when admitted into the hospital. He then had œdema of the legs, with discharge from them of a watery fluid, and dropsy of the abdomen. No appetite; thirst; pain under the ribs, principally on the left side; and vomiting of a clear fluid tinged with blood; which, in connection with the disease, may be considered indicative of obstructtion of the liver. Had slight palpitation, dyspnœa, and rigors, dependent on the dropsical accumulation; and yellowness of skin, and conjunctiva.

On examining the abdomen, the liver could not be felt at all, until after he had been tapped. Its edge was then felt in the epgastric region, resistent, but could not be made out in the right hypochondrium. Dr. Williams then remarks upon the diagnosis and treatment:]

I came to the conclusion, on first seeing this patient, that it was a case of ascites from diseased liver. The diagnosis was too plain to need any comment here. It was evident from the great enlargement of the abdomen—enlargement with fluctuation in all the most dependent parts of the cavity, while the tympanitic sound arising from the intestines was still in the anterior parts as he lay on his back. Why did we conclude that the dropsy arose from diseased liver? One great reason was this: it is the cause in nineteen cases out of twenty, where ascites prevails to this extent; and there were further reasons for coming to the same conclusion. In the first place, the skin was slightly jaundiced, but it was hardly yellow enough to make us sure that it was owing to bile; it might be ascribed to that condition of the blood which we see in Bright's disease, in the advanced stages of albuminuria. But we refer to the conjunctiva to determine that point. On looking to this membrane, we found it was distinctly yellow,—not exhibiting a mere mixed muddy yellowness, such as is seen in cases of albuminuria, but a distinct yellow tinge, evidently arising from an admixture of bile. But the yellowness of the skin could also be shewn to be from bile. Although the skin was pale, yet there was colour enough from the blood-vessels to make the hue of the skin a reddish-yellow, constituting a natural sallowness or swarthy tint; but by removing the vascularity by pressure of the finger, the true bilious yellow was rendered more distinct. This is, in fact, a test for the slighter descriptions of jaundice, particularly in persons whose complexions are not very fair. This was an additional mark of the liver being diseased. But, thirdly, we had the condition of the urine. I have not mentioned that, because it comes in the after reports. The urine was passed in a scanty quantity, turbid, high-coloured, and depositing a pink sediment. There was also a good deal of common lateritious sediment—lithate of ammonia; but on the surface of this, subsiding after the other sediments, was a fine bright rosy-pink deposit, corresponding with that which is described as occurring especially in connection with organic disease of the liver.

But we had better evidence than all this that there was disease of

the liver in the examination of the liver itself. As I stated before, this did not come out on the first examination, in consequence of the distended state of the abdomen; but even then I came to the conclusion that the liver was in an altered state, otherwise we should have had evidence of its presence in its proper position. That evidence is this. In those rare cases in which there is ascites without an alteration in the form of the liver, the organ lies in its usual situation, with its margin about an inch and a half below the margin of the chest at the epigastrium, presenting at that spot some dulness on percussion, gradually shading into the tympanitic sound of the intestines that lie underneath. When the liquid effusion is more extensive, it comes between the wall of the abdomen, and constitutes a fluatuating medium, which can be sensibly displaced by pressure. This is still more perceptible where there is enlargement of the liver, and which is a common case. In such cases (ascites with enlarged liver), if we do not feel the liver by the ordinary mode of examination, by pressing more deeply the hand comes in sudden contact with it, after having displaced the superficial layer of liquid. This was not to be perceived here; therefore it is clear that the liver was not in its usual situation. So far, we had negative evidence, but we had further positive evidence of disease existing in it. After the operation was performed, a portion of the liver then became perceptible at the epigastrium, and we could feel that it was in an altered state; it was far more resisting than natural, giving the idea of induration. It was felt to be rounded, as well as resisting, at its lower edge, which shewed a considerable change in form. The left lobe of a healthy liver tapers away till it becomes very thin; therefore, instead of the resistance being equal below to what it is above, it is greater as we go upwards. But we found it in this case to be the same all the way down, shewing that there was an induration and thickening of the margin of the left lobe: the right lobe was out of our reach in the situation we found it after death; but this was enough to give us a direct physical proof of alteration in the state of the liver, and therefore warranted the diagnosis of ascites from diseased liver.

[This diagnosis was distinctly made out, notwithstanding the great thickness of the abdominal parietes, which was between three and four inches, and only pierced at last by a female catheter, after the whole length of a bistoury had been plunged in without effecting the desired object.

The kidneys were also found diseased; "the urine was turbid, scanty, generally high-coloured, but did not abound in urea, nor was the specific gravity very high." No diuretics produced much effect, nor did the kidneys perform their functions any better after the withdrawal of the fluid, as might have been expected. Neither was the eruption dependent, as such frequently is, on renal obstruction, improved at all by the operation.]

Then comes the subject of treatment. It was obviously an indication to draw off the superfluous fluid accumulation which had taken place in the abdomen, and to diminish the congestion of the

portal system which was the immediate cause of it; it was an object, though I have mentioned that we failed in accomplishing it, to increase the urinary secretion; and it was a third object to keep up the general health and strength, which had been very much lowered.

The first indication was attempted by hydragogue purgatives. In the first instance, cream of tartar was exhibited in large doses, and it produced some temporary benefit; but as it began to distend the abdomen with flatus, caused griping, and otherwise disagreed with him, it was discontinued. On referring to the report, you will find that the abdomen was diminished in size after four or five doses of the cream of tartar, and he began to be better: but still, as there was not enough impression made, and loss of time was of importance, I thought it right to try more active remedies of the same class. Elaterium was given, and the mode in which it was exhibited caused no sickness; there was a little pain in its operation, but very transient. A quarter of a grain was given in a pill, with a drop of creosote, and a drop of croton oil, by which its operation is rendered more speedy, and there is less tendency to nausea. This acted very freely on the intestines, causing very copious evacuations, which brought on some faintness, so that it was necessary to give it less frequently, and it reduced his size for a time. Afterwards the disease again gained ground, and we were obliged to resort to paracentesis abdominis.

With regard to another indication, the secretion of urine, I may mention that I used among various diuretics one that I have found of great use in diseased liver—nitric acid with extract of taraxacum, but it produced no impression here, nor did any of the various other diuretics given.

The other indication, that of keeping up the general health, was attempted to be fulfilled by combining with the diuretic medicines a little quinine, varying this with other tonics from time to time, and allowing a liberal supply of animal food.

There was another indication which I did not overlook, that of endeavouring to reduce the disease of the liver. Supposing that congestion or chronic inflammation might be concerned, if not in its production, at least in its continuance and increase, I used a blister to the region of the liver, and friction with strong iodine liniment. Some uneasiness which had been felt there was thus relieved, but no further good resulted.

[Death occurred about six weeks after admission, probably from a vitiated state of the fluids, rather than from the amount of the dropsical effusion. At the *post-mortem* examination, which was obtained with difficulty, the liver was found reduced in size chiefly at its margin, which was retracted, thick, and rounded, and except towards the epigastrium, did not reach lower than an inch above the margin of the ribs.]

It was not only shrunk in some degree in size, so that there was no sign of enlargement, but it fell further back than usual, and I attribute that, as I shall afterwards explain, to the remarkable

weight of the liver, connected with its extreme density and hardness. Its weight was great—not less than four pounds and two ounces: although it was smaller in its expanse than in its natural state, yet its weight was greater—half a pound above the average. It was of a buff yellow colour; its capsule was not thickened, but under it the surface exhibited numerous small yellow granular prominences, which communicated a roughness to the feel—little granules projecting under the peritoneal covering, and distinctly corresponding in character to the granular projections in several other cases which we have had of cirrhosis of the liver. But on a further examination it exhibited some differences in these particulars. Its texture was exceedingly dense and firm, and exhibited in all parts bright yellow spots of the size of pins' heads, or even larger. The tissue in the intervals was of a light pink brown colour. Under the knife it imparted the sensation of cutting fibro-cartilage—it seemed quite to grate under the scalpel. The openings of the canals, on a section being made, seemed to be less in number and smaller than natural. With the microscope the yellow points were found to be composed of cells resembling the liver cells; the granules were more numerous and smaller than usual in each cell. There did not appear to be the usual number of fat globules in each cell; there was a great deal of filamentous tissue in the composition of each mass.

We have had several specimens exhibiting a good deal of the morbid anatomy of the disease of liver, but this is a new variety, though I have seen several instances of it before. I think it ought to be classed with granular diseases of the liver—cirrhosis, merely presenting certain accidental modifications. The change was obviously dependent upon interstitial deposit. It was not a growth of the liver; it was not hypertrophy of the organ, an increase of the natural constituents; for the ordinary constituents were much wanting, and were only to be traced here and there; but it was something deposited throughout the whole substance; and this, on a microscopic examination, with which Dr. Quain has supplied us, appears to have been a matter containing cells like those of the liver, but differing in their constituents being more granular: this may be considered a specimen of cacoplastic deposit of a very low class. But there was something beside the granules; there were filaments in considerable abundance, something in structure like fibro-cartilage, pervading the whole mass. It was this deposit that superseded the natural secreting structure, and increased the density of the liver, causing its great induration. This, together with the contractile process to which that matter always tends, had likewise the effect of obstructing the vessels, and causing the diseases of which we had the proofs, obstructing the blood-vessels, and thus leading to the production of abdominal congestion first, and ascites as its result; obstruction also of the minute hepatic ducts, thus interfering with the excretion of bile, causing jaundice.

In the kidneys a similar deposit appears to have taken place. The substance of the kidneys was increased in size and in hardness

by this sort of interstitial matter; but here its microscopic structure was more granular than in the other case, wanting the cells which are dispersed throughout the deposit in the ordinary forms of Bright's disease. This, I think, is enough to account for the interference in the functions of the kidneys—to show why they did not secrete urine to a sufficient amount. But you will be ready to ask how it was that we had not albuminuria? how it was that the usual characters of deposit of granular degeneration of the kidney were not present in this instance? I can see a probable reason; but I only put it as an hypothesis. You know my crotchet about albuminuria. Albuminuria essentially depends on a congested and obstructed state of the cortical part of the blood-vessels of the kidneys—an obstruction, not as I used to think, and others still hold, of the Malpighian bodies, but of that part of the vascular plexus which is directly concerned in the secretion of the proper constituents of urine. It is the obstruction and change in that which seems to be chiefly connected with temporary albuminuria, and also permanent albuminuria, and coincident alteration of the condition of the urine. Where that disease has gone on to a moderate structural change, generally speaking, the corpora Malpighiana are left more or less free. When I first made known these views five years ago, I thought that the corpora Malpighiana are primarily concerned; but since Mr. Bowman has published his researches on the structure of the kidney, I have corrected this view, and have so expressed it for the last two years. The obstruction in the vascular plexus beyond the Malpighian bodies will cause a great distension of them, and when thus distended, instead of allowing the mere watery parts of the blood to pass through, which is their natural office, and in which almost pure water passes,– instead of that, if the transit of blood be prevented, they will let serum through. But how will it be, if the deposit which obstructs the passage of blood through the kidneys is not confined to the vascular plexus, the proper secreting structure, but involves also the corpora Malpighiana, and the vessels which go to form them? Unless the deposit is considerable, it cannot press on these bodies, because they hang free in the extremities of the uriniferous ducts, without any thing to cover them, in a position entirely anomalous, and that they are less exposed to pressure. But if, on the other hand, the deposit in the kidney be very extensive, pervading every structure, and compressing even the Malpighian bodies, then the effect will be, not to produce albuminuria, not to substitute for the secretion of urine a transudation of serum and the watery constituents of the blood, but in proportion to the deposit to reduce the secretion altogether, and thus to allow a smaller quantity of urine, urine of moderate specific gravity, to pass through. That is the hypothesis I would give to explain this condition. This case brings to my mind other instances in which we have had cacoplastic degeneration of the kidney, with considerable enlargement and induration of the organ, but no albumen in the urine, or only very slight in amount, and the urine has generally been very scanty and high coloured.

Medical Gazette, Sept. 12, 1845, *p.* 833.

56.—GRANULAR DISEASE OF THE KIDNEYS.

By Dr. Julius Vögel. (Contributed by Mr. W. S. Kirkes.)

[The following case of granular disease of the kidneys is valuable, on account of the ease with which the urine was examined during life. It throws some light upon the disorganization of the renal tissue which was found on post-mortem inspection; and without the presence of which there would, from the general absence of local symptoms in these cases, frequently be no morbid appearance sufficient to account for death. It is extracted from Dr. Vogel's work on Microscopical Morbid Anatomy.

The patient was forty-four years of age, of an unhealthy aspect, and almost idiotic, so that little could be learnt of his previous history, the cause of his malady, &c. His body was universally œdematous, and had been, he said, for four or five days; he thought it might be owing to cold.]

The anasarca was very extensive over the whole body; the scrotem, penis, and face were especially much swollen. The patient had occasional cough, without expectoration, and complained of a slight prickling pain in his chest. Respiratory murmur was diminished over the whole anterior part of the chest; no rhonchus. Resonance on percussion was impaired. The sounds of the heart were somewhat obscure, which was considered to be due to the existence of hydrops pericardii. The impulse of the organ, on the contrary, was strong and forcible, such as it is in commencing concentric hypertrophy; but it was not perceived over a larger extent than natural. The abdomen was free from pain even on considerable pressure, but the patient winced when deep pressure was made over either lumbar region, especially over the right. He occasionally vomited a greenish fluid, tinged with bile. His pulse indicated hardly any trace of febrile excitement. His urine, passed in abundance, was of natural colour, and contained a large quantity of albumen. It had a decided acid reaction, was of a pale yellow colour, somewhat turbid, and deposited a yellowish brown, not very abundant, sediment. A quantitative analysis of it gave, in 1000 parts—

Albumen (dried at 212° F.) . .	8·4
Fixed salts	5·7
Urea	11·5
Solid residue	13·2
Water and substances volatile at 212° F,	961·2
	1000·0

[Emulsions were administered, a poultice was applied to the abdomen, and he was cupped over the loins. The vomiting and diarrhœa subsided under this treatment, but the pulse became stronger and more febrile, and headache was complained of. This increased, the pain in the lumbar regions still remaining;]

There was considerable fever, his pulse became full and hard, and

he had bloody frothy expectoration. There was diminished respiratory murmur in the left lung, but no rhonchus: in the right lung the respiratory murmur was natural. The heart's sounds were heard on the right side of the chest, and were especially loud below the sternum, vomiting had again returned. The urine was of a blood-red colour; it presented under the microscope a few blood corpuscles (no doubt from the kidneys). There was no sediment; it had an acid reaction; 1000 parts contained 8·4 parts of albumen, including blood corpuscles (dried at 212° F.)

[The same treatment was continued and a small quantity of blood was taken from the arm. The feverish symptoms now subsided, the urine became turbid, and deposited a brownish sediment, which was found to consist of decomposed blood. About three weeks after admission, the urine, which was acid and of sp. gr. 1009·8 was examined with great care. Crystals of uric acid were found in the sediment, with a few blood corpuscles, some small clots, and epithelium. The proportions of albumen and urea were in 1000 parts—

Albumen (including blood) . . .	2·5
Urea	10·9

Diuretics induced abundant secretion of urine, with very slight traces of albumen and blood. The patient's health varied very much from this time to the close; fever being present and absent by turns. The urine was at times bloody, and again clear with very little albumen, seventeen days before death, which occurred after he had been about fifteen weeks under treatment, the urine contained only 0·75 of albumen with blood in 1000.]

Autopsy.—In the cavity of the chest there was a very large quantity of yellowish serum; the sac of the right pleura especially was filled with it, and the right lung, in consequence, was pushed upwards and inwards, and compressed so as hardly to equal "a fist and a half" in size. Its substance was compact; it contained no air, and very little blood. In the sac of the left pleura there was a somewhat less quantity of fluid, though much more than natural. The left lung was œdematous above; the lower lobes were loaded with blood. There was much serum in the sac of the pericardium. The heart was greatly enlarged, and its walls hypertrophied; those of the left ventricle were from three-quarters of an inch to an inch in thickness, those of the right from two to three lines. The cavities of both ventricles were also dilated. In the cavity of the peritoneum there was a very large quantity of yellowish serum. The liver was small; under the microscope its cells appeared filled with granular deposits of bile pigment of a deep yellow colour. The other abdominal organs were healthy. The stomach contained a fibroid tumor, about the size and shape of an almond. The left kidney was covered on its surface with a gelatinous-looking exudation (serum infiltrated into the cellular texture of the capsule.) It had two ureters, which were re-united into one below. Its parenchyma was altered; the cortical substance was hard, firm, slightly granu-

lated, of a whitish colour, and very clearly distinguishable from the bright red medullary substance bordering upon it. A more accurate examination gave the following results:—The cortical substance appeared on a section from two to three and four lines in thickness, yellowish-white, very firm and brawny, (speckig), and was marked with scattered red points and lines (blood-vessels.) Its parenchyma appeared under the microscope very bloodless, though unaltered in structure. The corpora Malpighiana were distinct, but their vessels were much more deficient in blood than when in their natural condition. The tubuli uriniferi were indistinct, and did not admit of being separated from each other so readily as in a healthy kidney. The whole tissue seemed to be thickened by an uniform deposit of an amorphous fibrinous exudation. There was no trace of further development or organization in this product of inflammation; no granule cells or pus corpuscles. The medullary substance was of a bright red colour, also tough and firm. Under the microscope its vessels appeared filled with fluid blood. The uriniferous tubules were very distinct, and were formed of a delicate pellucid membrane, with internal nucleated epithelium cells. In some places these tubules contained in their interior dark globular heaps of granules; in other places there were situated in them brownish-yellow granules, evidently the remains of decomposed blood. Beyond this there was nothing abnormal seen, except that here and there some amorphous fibrinous exudation was deposited between the tubules. The right kidney was small; its parenchyma presented the same change as that of the left—a deposit of fibrinous exudation in consequence of chronic inflammation.

Medical Gazette, May 2, 1845, *p.* 1.

62.—ON THE PATHOLOGICAL CHEMISTRY OF THE URINE AND BLOOD.

By G. Badley, Esq., Liverpool.

On some circumstances influencing the coagulation of albumen.—A short time since some urine was left me for examination, containing pus. It was filtered, and heat applied to the clear fluid, which was acid, to ascertain the quantity of albumen it contained; but it was boiled without effect. The non-occurrence of coagulation being unusual under such conditions, I added some nitric acid, which immediately caused a precipitate that became flocculent by heat.

It is stated by Dr. Rees (whose researches in this department have deservedly given much authority to his name), that "acid urine never prevents the precipitation of albumen by heat," and that "a specimen shewn to be acid, and not coagulable by heat, may safely be declared free from albumen.

Here, however, was acid urine containing a considerable quantity of what I could not but consider albumen, yet unaffected by a boiling temperature, and therefore quite at variance with the above

statement. On inquiry, the only thing I ascertained was, that some nitric acid had been previously poured into it.

The following are the results of an examination, suggested by the above circumstance, into the influence of this acid upon the coagulability by heat of albuminous urine.

Three drachms of urine, sp. gr. 1013, acid, containing nearly 0·8 per cent. of albumen, the coagulum occupying a quarter of the bulk of the fluid, was unaffected by heat after the addition of one drop of equal parts acid and water, and remained permanently transparent. More than twelve times this quantity, however, diffused through the fluid, was insufficient to cause any immediate opacity. In three drachms and a half, with the same quantity of acid, there was no immediate effect by heat, but a slight cloudiness after standing a short time. Opalescence was produced in half an ounce, but no precipitate after standing.

In other words, one part of nitric acid is sufficient completely and permanently to prevent coagulation by heat in about 750 parts of urine, containing a large quantity of albumen;—to prevent any immediate effect, all that is generally waited for, in about 850 parts;—and to interfere materially with a correct estimate being formed in a much larger proportion. The quantity of albumen being small, as it generally is in advanced stages of renal disorganization, 1-1500 or less acid will produce the same effect.

The turbidity produced by heat in such urine is removed by a drop of the acid added to the hot liquid. This does not take place when it is first allowed to cool; but even then heat will permanently restore its transparency. This is due to the re-solution of the albumen, and not to its separation into corrugated flocculi, by which, when there is a denser coagulum, and more acid, the opacity of the fluid is always in some degree lessened. The acid should therefore be used in excess, or not until the fluid has become cold, otherwise that will be ascribed to a deposition of phosphates which is really due to coagulation of albumen. In some urine I lately examined, the former re-dissolved as the fluid cooled, and was thus sufficiently distinguished from albumen. These two re-agents, heat and nitric acid, are generally considered not only indispensable in examining urine for albumen, but, when used together, certain in their indications. The acid is thought by some to aid the effect of heat; its tendency is, to a certain extent, however, to oppose it. The one is undoubtedly essential to correct the fallacies of the other; but care should be taken that what is intended to correct is not itself a cause of error.

Dr. Watson states that nitric acid "will detect albumen when the tested urine is alkaline;" this is well known, "and by *restoring its acidity*, will make the albumen discoverable by the test of heat." This, however, is a condition which will as effectually prevent the coagulation by heat as the previous alkalinity; a drop beyond what would neutralize the alkali being sufficient for such a result. When the urine therefore, is alkaline, the acid should always be employed as the precipitant, and never with the intention of "restoring acidity."

Dr. Christison, speaking of the separation of earthy phosphates, when in excess, by heat, and the mistake liable thereby to occur, says (and this is quoted by Dr. Copland) that it is "a deposition which nitric acid will both *prevent* and remove." This acid, however, which will prevent the deposition of earthy phosphates by heat, will equally prevent that of albumen.

In the remarks preceding the extract from Dr. Rees's paper in the Medical Gazette, before referred to, it is observed that "he was one of the first to shew that it was necessary for nitric acid *also to be present*," heat alone not being a sufficient proof of the existence of albumen. From what has been stated, it will be seen that it is necessary for nitric acid *to be absent* while applying the test of heat, however necessary its presence may be to correct or corroborate the indications of the latter after it has been applied.

The conclusion to be drawn from the passages quoted is, that by adding nitric acid to the urine, we remove the fallacies and insure the accuracy of heat as a test for albumen. I think it very desirable that an impression shewn by the above remarks to be incorrect and by the above quotations to be generally entertained, and which I also *know* to have led into error, should be corrected. In several instances I have been told that urine was not albuminous, which, again examined, became turbid and flaky by heat, remaining so after the addition of acid. I have known the dilute acid employed to neutralize alkalinity before applying heat. This is also sometimes used as the precipitant. If the albumen be not abundant, the quantity added would probably be often not sufficient to cause a persistent precipitate, especially if heat were applied, yet quite enough to prevent coagulation by the latter. The absence of albumen would thus be wrongly inferred. The strong acid should therefore always be used.

The quantity of acid necessary to produce the effect above described is so minute, that I have found a little urine, tested by it, adhering unperceived to the sides of a test tube, sufficient to falsify the result. Thus, a tube in which a portion of albuminous urine had been thus coagulated, was used to test another portion by heat. A little excess of acid had been added, and the tube emptied, the contents being allowed to drop out until none appeared to remain. The result of the latter examination would have been a fallacious one, as no coagulation took place. This is by no means an improbable source of error. A neat and careful analyst will of course always clean his apparatus after one experiment before performing another; but this is not as we see it in the rough testing for clinical purposes, one after another perhaps using the same glass with either test. It is well, therefore, to guard those who are in the habit of making such examinations (probably too often neglected), against a wrong conclusion—so easily avoided—on a subject often so important in diagnosis.

This property of nitric acid may possibly sometimes admit of useful application. Dr. Bird has seen a very highly coloured deposit of pink urate of ammonia, occurring in albuminous urine, mistaken

for blood; this kind of deposit, when in abundance, requiring a higher temperature than the ordinary sediments of the urates of re-dissolve it. A little nitric acid, by preventing the coagulation, of the albumen (the cause of difficulty), might have enabled the resolution of the deposit by heat to have been recognized, and its character thus determined more readily than by filtering, &c. Sufficient might also probably be added to dissolve any phosphatic deposit, which sometimes occurs in albuminous urine, without coagulating the latter, and thus to distinguish it from the mucus and epithelial scales, which are generally the cause of the opacity. These are, however, merely suggestions.

Although Dr. Prout has discovered this acid existing naturally in the urine, it would, even if free, be probably in a proportion too small to have any influence. I have, however, lately seen it mentioned, on the authority of M. Becquerel, "that acid urine containing albumen will sometimes not coagulate by heat alone for some unknown reason."

Several circumstances, as we have seen, are liable to render fallacious a negative result of the application of heat. At the time of making the above experiments, I knew of nothing to interfere with the conclusion that there was no albumen present when nitric acid was added in moderate quantity without effect. I have since found, however, that a small proportion of the acid (insufficient to render it turbid), diffused through albuminous urine, and allowed to remain about twenty-four hours, or less, will diminish or quite prevent its opacity upon the further application of the test; although another portion of the same urine, tried at the same time, may become completely turbid by acid, and also by heat, afterwards depositing a small coagulum. The same effect was not produced on diluted serum. What the particular action or change in the urine is on which it depends, I am not prepared to say.

Medical Gazette, June 6, 1845, *p*, 242.

63.—*Singular property of Albumen.*—[The following is valuable, as pointing out one of the sources of fallacy which may occur in testing for albuminous urine.]

Professor Wunderlich remarked that any albuminous fluid loses the property of coagulating by heat, when the free alkali contained in it is neutralised by a few drops of nitric or muriatic acid. Even if a slight turbidness should result from the addition of the acid, this disappears on heating the liquid.

Remarks.—We have observed a similar effect on the addition of acetic acid to an albuminous liquid: but it appeared to depend on the quantity of albumen present. It was long ago shewn by Magendie, that when acetic acid was added to serum, the mixture might be heated without coagulation taking place. It merely became opaline; and on cooling, if not too dilute, it became solid; on again heating it, liquid.—Ed. Gaz.

Medical Gazette, Aug. 22, 1845, *p*. 746.

64.—*Test for Sugar in Urine.*—Lowig recommends the following:—Evaporate the urine to the consistence of syrup; treat with alcohol; then to the solution add an alcoholic solution of potash; if sugar be present, a white precipitate is formed, consisting of a compound of sugar and potash; wash this with alcohol, and dissolve in water; thus a saccharine solution is formed, which may be examined in any way, and if required, the amount of sugar determined quantitatively.—*Buchner's Repert., vol.* xxxviii., *part* 2.

Lancet, Sept. 6, 1845, *p.* 265.

TOXICOLOGY.

65.—ON THE ACTION OF POISONS.

By Dr. Christison, F.R.S.E., &c.

[Respecting the mode of action of poisons, the facts yet known are scarcely sufficient to set the long disputed question of action by absorption or sympathy at rest. We can hardly believe that the former is the case,—that a poison must make the whole round of the circulation, and in most cases be absorbed into the system prior even to this taking place. Yet according to Liebig, "comparatively large quantities of hydrocyanic acid in aqueous solution, may be taken into the digestive apparatus, without producing any very perceptible noxious effects, whilst the same quantity of acid inhaled as vapour produces instant death." The mode in which this experiment was performed was by placing three drops of anhydrous hydrocyanic acid on the tongue of a cat; no effect was produced whilst the animal was prevented breathing, but instant death resulted when respiration was allowed. Now how is this to be explained? Not by sympathy, for by that doctrine contact alone with the nerves of a part is all that is needed for the poisonous action to commence. According to this experiment, the vapour of prussic acid is limited in its operation—it does not act until it reaches the lining membrane of the lungs in combination with atmospheric air. And this of a substance so volatile as to boil at a temperature below 80 degrees, yet is asserted to have no power of penetrating to the air-cells, without the assistance of inspired air! According to this doctrine no effect should be produced if prussic acid, or its combinations were injected into the rectum; yet we believe one death has already been produced by cyanide of potassium being thus used. We can say this much that we should not like to try it, neither would its most sanguine promulgators, we hesitate not to say.

As tending to throw some light upon this intricate, and as yet, obscure subject, we quote the experiments of Dr. H. Meyer on the action of prussic acid on animals, premising that he used that of Ittner, containing 10 per cent. of anhydrous acid:]

He found—1. That the acid had a paralysing action on the peripheric nerves, i. e. it suppressed sensation and motion, and occasioned

congestion with augmented secretion, which was chiefly observed in the cavity of the mouth. 2. He found it to act only when received into the vascular system. On mechanically arresting the circulation, the poison did not act, although the integrity of the nervous system was preserved. On restoring the circulation the operation of the poison was immediately observed. 3. Hydrocyanic acid does not act so rapidly as it was formerly believed. Its operation was never instantaneous. 4. Its fatal effect is owing to paralysis of the heart induced by the topical action of the blood mixed with hydrocyanic acid upon that organ. It required about thirty seconds for the poisoned blood to reach the heart and produce its paralysing effects, and it mattered not whether the poison was applied directly to the substance of the heart, or to parts remote from it. In Dr. Meyer's opinion, prussic acid may act independently of the brain or nerves, or of their intervention. It requires for its operation, absorption and diffusion until it reaches the heart. It is owing to this, in his opinion, that amphibia are less rapidly killed by this poison than mammalia,—the action of the heart in those animals being less necessary for the maintenance of life. Nevertheless, in a certain dose the poison may act upon and paralyse the nervous system producing tetanic convulsions, congestion of the veins, and exudations in the serous cavities. It is not true, as is generally believed, that in death from prussic acid, the blood does not coagulate. Dr. Meyer found that this liquid coagulated in the bodies of the animals which were killed in his experiments. (Schmidt's Jahrbücher, 1844.)

British and Foreign Medical Review, Oct. 1845, *p.* 318.

66.—ON POISONING BY PRUSSIC ACID.

What ought a practitioner to do in so fearful an emergency ?

We have no difficulty in answering this all-important question. 1. He ought, in the *first* place, to dash cold water on the face, the naked anterior part of the chest, and dorsal spine. Care must be taken not to soak the clothes of the patient. The object is not to chill the patient, but to produce a sudden shock on the external respiratory nerves, for the purpose of inducing a sudden expansion of the thoracic walls, and a full inflation of the lungs as a consequence thereof: and farther, by getting the lungs thus expanded, we enable the right side of the heart to unload itself. 2. Diffusible stimuli may be given. 3. A small, but sudden abstraction of blood *pleno vivo*, from the jugular vein, must be practised if the heart has ceased to beat, or beats very feebly. 4. If the cold affusion, diffusible stimuli, and bleeding from the jugular, are not sufficient to restore the action of the heart and lungs, then artificial respiration must be resorted to.

We need say nothing in favour of the cold affusion, as every one believes its employment in poisoning with prussic acid to be orthodox. The same remark will apply to the exhibition of diffusible stimuli and trying artificial respiration.

With regard to the "small but sudden abstraction of blood from the jugular vein," it is necessary to say something in the way of explanation, as very few of the numerous writers on poisoning with prussic acid, whom recent events have called into print, seem to be aware of the object for which it is resorted to.

The recommendation and explanation of this treatment was given incidentally by Dr. Cormack, in 1836, at pages 84 and 92 of his Treatise on Creosote. He there endeavours to show, that in poisoning, both with creosote and prussic acid, the right side of the heart becomes rapidly unable to contract, from mechanical distension with blood, and that if this state be averted for a comparatively short time, recovery may take place. Dr. Cormack has also some remarks on this topic in his Prize Thesis on Air in the Organs of Circulation, published in 1837. But the fullest exposition of the subject is that afterwards given by Dr. Henry Lonsdale, in his admirable Experimental Inquiry into the Physiological Action, Poisonous Properties, and Therapeutic Effects of the Hydrocyanic Acid, a paper which formed the Author's Thesis on the occasion of his graduating at Edinburgh in 1838, and was afterwards published in No. 138 of the Edinburgh Medical and Surgical Journal. He says:—

Though the value of those remedies commonly advised has been considered at some length, I am strongly impressed with the belief, that an important part of the treatment of such cases still remains to be noticed. Looking at the mode in which death takes place,—the continuation of the heart's action for a short time after respiration has ceased,—the gradually increasing distension of the right side of the heart by venous blood, and then the final arrestment of the movements of this organ;—the renewal of the contractions of the pulmonic heart, after the withdrawal of a small quantity of blood from its auricle, are all circumstances of the utmost importance, as suggesting the principles of treatment. It has already been stated that the acid, although having a direct influence on the central organs of the nervous system, also affects the contractility of the heart, and that this effect on this organ varies from a slight diminution to complete suspension of its contractility, according to the amount of the dose and other circumstances. In those cases in which coma is induced, without much, if any diminution in the contractile power of the heart, the blood, notwithstanding, becomes congested in the right side of that organ, from the imperfect manner in which it is transmitted through the lungs, as occurs in all cases where the respiratory movements are imperfectly performed; bleeding from the jugular, by relieving the engorged state of the right side of the heart, may be expected to favour the remedial agent, such as dashing cold water on the face, applying ammonia to the nostrils, &c., employed to revive the patient and cause him to breathe. It also appears, that when the effects of the acid upon the heart are transitory, and produce only a temporary diminution of its contractility, the right side of the heart becomes engorged during the partial suspension of its movements, and that when it would renew its usual contractions, it is prevented from doing so by the

mechanical distension of its walls. By opening the jugular, in these circumstances, we may hope to relieve the engorgement of the right side of the heart, and thus materially favour the renewal of its contractions. It needs no remark, that in those cases where the acid acts with sufficient energy to arrest primarily the contractility of the heart, all remedial agents will be applied in vain.

I have often observed, that the puncturing of the subclavian vein in the lower animals had the desired effect, and am therefore led, *à priori*, to believe that the opening of the jugular vein in the human subject will serve the same purpose—that of unloading the right side of the heart. But Haller has shewn by experiment, which was afterwards confirmed by Spallanzani, that the right side of the heart could be emptied of its blood by opening the jugular vein. This was attributed by Haller entirely to the derivation of blood, as is observed in the flow of this fluid from vessels opened at a great distance from the heart. These experiments of Haller have been more fully illustrated by my friend, Dr. John Reid, in the 127th number of the Medical and Surgical Journal. He is of opinion that the flow of blood from the lower orifice of the jugular vein depends on the contraction of the right side of the heart; but in cases where the heart is extremely congested, he believes the derivation of Haller to come first into operation. Connecting Dr. Reid's observations with what I have witnessed in thirty experiments, there appears little doubt in my mind as to the mode of proceeding in cases of poisoning with hydrocyanic acid. But as in practice we must be governed by more than theoretical opinions, experiments were instituted to ascertain the value of bleeding from the jugular vein. Before detailing these, it may be well to notice the opinions of authors. Hume observed that bleeding was useful in "relieving the violent symptoms" in a dog poisoned by the acid under consideration. Of its *modus operandi* we are not informed. Orfila repeated Hume's experiments, but without success. Dr. Paris says, bleeding seems a decidedly fatal measure; while Dr. Christison remarks, that venesection is probably indicated by the signs of congestion in the head. The discrepancy of opinion stated by the above authorities appears to be attributable to the want of physiological data.

Exp.—A ligature was passed around the left jugular vein of a small lean dog, of the bull-terrier breed, five months old. The animal was made to swallow ten drops of prussic acid; he became violently affected before the thirtieth second, and in ten seconds more, there was complete tetanic rigidity of the whole body, with expulsion of the urine. As these two symptoms were very generally observed to be the immediate precursors of death, the jugular was now freely opened, and the blood flowed in a forcible stream to the extent of two ounces, when it was stopped. As the ligature had been drawn tight before the vein was opened, the blood could only come from the larger venous trunks leading directly to the right side of the heart. After the bleeding, we felt more distinct contractions of the heart, and the respiration returned. In three

minutes, the respiration became more active, and there were some signs of returning sensibility. In ten minutes, his state resembled that of drunkenness. Before the 25th minute, he walked across the room; and in half an hour, he was perfectly recovered.

In this remarkable experiment, there was realized more than my most sanguine reliance on the treatment by venesection had ever anticipated. The dose, as produced by previous experiments, would have produced death in two, or at the farthest three minutes after being taken. That bleeding in this experiment was not beneficial by relieving cerebral congestion is quite apparent, because the ligature on the vein prevented the return of blood from this quarter.

In a second experiment, where a ligature was also placed on the jugular vein as in the previous experiment, bleeding was equally successful. It was observed in a third experiment where the dose of the acid was so large as to preclude all hopes of recovery, that bleeding from the jugular vein prolonged life, and thus afforded time for the application of other remedial agents.

The following experiment was made by Drs. J. Reid and Duncan, and Mr. Spence. To a large-sized dog, a strong dose of diluted acid was given. The animal was soon affected with convulsions, which continued for two or three minutes, and he was apparently dying. The cold affusion had little or no effect. The external jugular vein was now opened, and the blood had scarcely commenced flowing, when the convulsive movements began to diminish, and continued to diminish rapidly, during the flow of the blood from the vein. After losing a few ounces of blood, the animal recovered.

Dr. Cormack has detailed a similar experiment, in which the effects of relieving the distension of the heart are strikingly illustrated. After the acid was administered, the animal seemed to be in the agonies of death, but whenever the jugular vein was opened it began to revive, and seemed quite well at the end of an hour.

From these experiments, I feel no hesitation in saying, what might indeed be inferred *à priori*, from an acquaintance with the physiological action of the poison, that bleeding from the jugular vein is of essential service in the treatment of poisoning with hydrocyanic acid. It evidently acts by unloading the congested cavities of the right side of the heart, which enables this viscus to renew its contractions until the coma subsides.

The following case, related by Magendie, is further confirmation of the utility of bleeding from the jugular vein. A young lady, eighteen years of age, through the neglect of her physician, swallowed a large dose of an extemporaneous mixture containing prussic acid. A few minutes afterwards she was seen by Magendie, who found her labouring under drowsiness, convulsions, and cerebral congestion. A large quantity of blood was abstracted from the jugular vein, and several drops of ammonia diluted with water were administered; these measures were followed by a sensible amelioration; consciousness and tranquillity returned.

In my opinion, the relief of cerebral congestion was not what proved of advantage; for when a ligature was placed above the

opening of the vein, as in two of our experiments, benefit resulted. There cannot, however, be the slightest doubt that bleeding is rendered still more efficacious, by allowing some blood to come from the head.—*Lonsdale.*

In citing the experiments of Drs. Cormack and Lonsdale, Dr. Christison, (in his last edition,) remarks—It is probable that bleeding from the jugular vein deserves more attention as a remedy than it has yet received. The right side of the heart is almost invariably found much gorged with blood, in animals examined at the moment of death; and the contractions of the heart, in such circumstances imperfect or arrested altogether, have often been observed by experimentalists to be instantly restored, on promptly removing the state of turgescence.—*Christison on Poisons*, ed. 1845, p. 780.

Monthly Journal of Medical Science, Sept., 1845, *p.* 713.

67.—ON THE TREATMENT OF POISONING BY PRUSSIC ACID.

By James Hicks, Esq., Southwark.

Of all remedies, chlorine, ammonia, and the cold affusion, appear to be those most generally relied on; and as ammonia is most readily to be obtained, this is resorted to in the greater number of instances. Should I, however, at any time be called to a case similar to the one related in the first part of this paper, I would on no account lose time by endeavouring to pour fluids into the stomach—certain as I am, from the muscles of deglutition being so fully under the influence of the poison, that on that occasion not a particle passed into that organ—but would at once put in practice a suggestion, for which I have to thank Mr. Taylor (which, he states, is of much service in many cases of asphyxia, and as it is also extremely simple in its application, is well worthy of a trial). It is merely to saturate a handkerchief with the liquid ammonia, and then to wave it over the face of the patient, by which means the individual being as it were enveloped in an atmosphere of ammonia, there is every chance of its vapour passing into the lungs; and this has been found even of more service than where the ammonia has been given internally. There is, however, another remedy mentioned by the authors, but which I think has been spoken of too lightly; I allude to venesection. When we look to the extreme congestion of the brain and lungs, indicated by the symptoms, as also by the post-mortem appearances, bearing so close an analogy as they do to asphyxia from hanging or drowning, and at the same time remember the great benefit derived from venesection in restoring animation in restoring animation in the latter states, it appears to me by no means irrational to expect a similar benefit in poisoning by prussic acid. Against this it may be argued, that notwithstanding there may be a similar state of brain, so far as congestion is concerned, the causes giving rise to such a condition are very different; as, for instance, in asphyxia, produced in hanging, the cause is merely mechanical, which, being removed, the system

is left in a condition favourable to recovery, whereas in poisoning by prussic acid, the congestion of the brain being merely secondary, the primary cause arising from some impression made on the nervous system, it by no means follows that the same benefit should be derived by relieving such a state of brain in the latter instance as in asphyxia from hanging, until that impression, or whatever it may be, is in the first place removed. With this argument I to a certain extent agree, but still, on the other hand, fully believing as I do that it is quite incompatible with such an amount of congestion for the brain either to perform its functions, or even to recover itself, until this congestion be removed, I would by no means neglect to adopt venesection in any future case, in combination with cold affusion, ammonia, and artificial respiration. I would, however, observe, that in advocating bleeding, I do not mean to say that it is to be performed indiscriminately, but merely in those cases where congestion of the brain and lungs is evident from the bloated and livid appearance of the face, as in the first case related. With respect to the treatment, I cannot do better than conclude with the words of Dr. Christison, who says, it is right to remember that on account of the dreadful rapidity of this poison, it will rarely be in the physician's power to resort to any treatment soon enough for success; and farther, that his chance of success must generally be feeble, even when the case is taken in time, because, when hydrocyanic acid is swallowed by man, the dose is generally so large as not to be counteracted by any remedies.

Medical Gazette, August 8, 1845, *p.* 633.

68.—COLD AFFUSION IN POISONING BY PRUSSIC ACID.

By Mr. Thomas Taylor, Cricklade.

[H. G., aged 59, a healthy agricultural labourer, suffering under ascarides, was ordered a castor oil and turpentine draught. He swallowed by mistake a mixture consisting of forty-five drops of (what was supposed to be) Scheele's Prussic Acid, diluted with ʒ vi. of water, which his wife was taking for a dyspeptic affection. Violent constriction of the diaphragm with a sense of suffocation, were immediately produced; he walked to the door, and fell, breaking a pan of water, with which his clothes were well saturated. When first seen the accident had happened nearly four hours; ammonia and cold affusion then speedily restored him.]

The acid which was here taken was supposed in the first place to have been Scheele's. On analysis, however, it was found that fifty drops gave only five grains of well-washed and dried cyanide of silver (equal to one grain of anhydrous prussic acid). The patient, therefore, swallowed a dose equal to that taken in Mr. Hick's case, elsewhere reported (Medical Gazette, Vol. xxxv. p. 893), *i. e. nine-tenths of a grain* of anhydrous acid, which shows that this dose may be taken without always proving fatal, although in this instance the

patient a stout healthy man, had a narrow escape of his life, for he only began to recover after hours. This case shows that in reporting a case of poisoning by prussic acid, it is always necessary, if possible, to determine the exact strength of the acid from part of the poison taken; for the acid here used was reputed to be Scheele's, when it turned out to be no stronger than that of the Pharmacopœia. It proves that a person, after having swallowed such a dose, may have the power of running a considerable distance; and further, that the contents of the stomach, in the short space of *four hours*, after nine-tenths of a grain have been swallowed, may leave no smell of prussic acid. This case is in many respects interesting and important.

We add to this two other cases, for the purpose of showing the beneficial effects of cold affusion.

Case of Poisoning by Hydrocyanic Acid.—Mr. Harthill has related a case of recovery from poisoning by hydrocyanic acid, which recently occurred under his care. He was summoned to a soldier, aged 23, about 6 o'clock in the evening of the 15th of January, and was informed that he had taken poison. He found him insensible, with convulsions. The mouth having been forced open, emetics of mustard and sulphate of zinc were exhibited. Mr. Harthill sent to Mr. Law, at the Infirmary, who arrived shortly with a stomach-pump, which was used for injecting the stomach, for the tube could not be introduced far enough to withdraw any fluid; a stream of cold water was applied to the spine, and turpentine enemata administered. The effects of the cold water were instantaneous, feeling and consciousness becoming immediately evident. Powerful stimuli, brandy and ammonia, were administered; sinapisms to the thighs, and in about four hours, eight minims of tincture of opium were given. The next day he was much recovered, and has since been sent to head quarters. On making search, an ounce phial was found, smelling very strong of hydrocyanic acid—labelled, but with the name of the druggist cut off, apparently by design, and no account could be obtained as to the place where it could be procured. (*Prov. Med. Jour. March* 1845.) The quantity taken is not stated.

Poisoning by Hydrocyanic Acid.—The following case was originally reported by Dr. Banks, of Louth, in the Edinburgh Med. and Surg. Journal, vol. xlviii. p. 44. We are induced to extract it in an abridged form, as the treatment appears to have been quite successful in an almost hopeless case.

A girl, æt. 19, while labouring under dyspepsia, took hydrocyanic acid as a medicine. In order that she might have it in as cheap a form as possible, an ounce and a half phial was sent, containing forty drops of the acid in the whole mixture, of which she was directed to take a tea-spoonful in camomile tea. She did not attend to the directions, and carelessly poured into a cup rather more than three-fourths of the whole mixture (therefore *thirty drops* of acid) into a cup, and drank it off. Immediately after taking it, she exclaimed, "bread! bread!" and in another instant her mother perceived her spring up convulsively from her seat, and quickly ran to her assis-

tance. The mother states that she was then quite senseless; her teeth firmly set, and her eyes staring and fixed. Two medical men arrived in five minutes after the dose was taken. No stimulants could be administered, as she was unable to swallow. The convulsive stage was now passed. The patient was lying on the floor senseless; the limbs quite flaccid; eyes fixed and glistening; pupils dilated, and wholly insensible; respiration slow and feeble, and the pulse scarcely perceptible, with a cold clammy sweat over the surface. In spite of stimulants being introduced into the stomach by the stomach pump, there was no amelioration in the symptoms. Cold affusion was then employed. A stream of cold water from a large pitcher held at some distance above was allowed to fall upon the head. In a minute afterwards the patient began to move. She then became convulsed, and writhed and moaned as if in agony. The respiration became stronger, the pulse fuller. The cold affusion was repeated, when she again cried out as if in great pain, extended the extremities, and passed an involuntary evacuation. The pulse and breathing continued to improve, and there was some appearance of returning consciousness. She was placed in a warm bed; reaction followed, and in a few hours she appeared quite sensible and collected, but had no recollection of anything that had transpired. She was ill and weak for a few days, and complained of weight, pain, and heat of the head, with some gastric uneasiness, but which were soon relieved. She perfectly recovered.

[The editor of the Medical Gazette adds—]

This case is highly interesting as showing the good effects of cold affusion. There is reasonable ground to attribute the recovery of this patient to the practice. It is far better than venesection, which can only be prejudicial where a powerful sedative effect has been produced on the heart. In one important point, the case is sadly defective,—the strength of the prussic acid, and the quantity of anhydrous acid taken in the *thirty* drops, are not mentioned. All we are informed of is, that the acid was procured from Garden, of Oxford Street. Dr. Christison states, that the dose here taken was very nearly a *whole grain* of anhydrous acid (770), but upon what authority does not appear.

Medical Gazette, May 16, 1845, *p.* 103.

69.—RECOVERY FROM POISONING BY PRUSSIC ACID.

By E. Bishop, Esq. Kirkstall.

[About midnight of the 30th of June, Mr. Bishop was sent for to a man who was stated to have taken poison. He found him in bed, senseless, with ghastly pale countenance; face swollen and covered with perspiration; breathing slow, laboured, and accompanied by a hissing sound; the corner of the sheet was between his teeth; along the sides of which quantities of thick white foam issued at each expiration; the eyes were wide open, fixed and glazed, and the pupils widely dilated; the pulse slow and scarcely perceptible,

heart's action weak, and the whole body in a rigid state, with the respiration becoming at each instant more laborious. His wife thought he had taken prussic acid, from finding a bottle so labelled, and Mr. B. accordingly decided on instantly trying the effects of cold water dashed on the body.]

I then prepared him for the cold douche, by tearing away his shirt and flannel waistcoat, and directing two assistants to hold him off the side of the bed. A bucket of cold water was soon brought, and with a vessel holding about a quart, I commenced pouring the water upon him, so that it might flow over his face, chest, and abdomen.

It produced a decided shock; he gave a start, after which the muscular system became relaxed; the sheet dropped from his teeth, and the hands opened; respiration was more quickly performed, and he sobbed violently. I applied it a second time; he again started, sobbed, began to roll his eyes about and utter the most agonizing cries. He evidently knew me, and in a second or two said, "God bless you, Mr. Bishop," and begged of me not to douche him again; but as respiration was still slow, and the pulse weak, I continued, and found that after each application of the water he breathed quicker, and the pulse also became quicker and stronger. I now dissolved two scruples of the sulphate of zinc in a tea-cupful of warm water, and asked him to drink it, which he did very well.

As soon as he had swallowed the emetic, ammonia, which I had sent for, on ascertaining that hydrocyanic acid had been taken, was brought to me; it was very strong, and I applied it to the nostrils, and rubbed the temples and palms of the hands with it. The pulse rose, the face became red, and at each inspiration of the ammonia, the patient said, "Oh, I am better now; this has done me good;" indeed, he became very loquacious, and it was with difficulty he could be restrained. In about ten minutes, vomiting took place, and the ejected matters smelt so strongly of prussic acid, that it was almost impossible to remain near it.

The pulse was now 90, and full; the countenance bloated, with redness of face; and he occasionally complained of crampy pain in his arms and legs, and said "It is coming on again."

I continued the application of the ammonia, and every minute or two caused him to inhale it.

A vein was next opened in the arm, and sixteen or eighteen ounces of blood extracted, *pleno rivo*. It was of a dark colour, and I thought at the time emitted the odour of prussic acid. Afterwards I was convinced this was an error, and that it arose from the room being so impregnated with the smell from the vomited matter. He occasionally complained of cramp in different parts of his body, but no other unfavourable symptoms followed.

The acid was not measured, but both the patient and the druggist, unknown to each other, marked the same place on the bottle, (which holds two drachms,) as the point to which the acid reached—viz., the lower edge of the label. On measuring this, I found it to contain exactly forty minims.

There are several very interesting and important particulars in this case, not the least of which is the appearance of the countenance, which was quite pale. In all the cases I remember to have seen recorded, just the contrary occurred; but it is worthy of notice, that when the messenger who came for me was called in by the patient's wife, he was at that time almost black in the face; this was two or three minutes after taking the poison. I saw him five or six minutes after this, and in the meantime the change must have taken place; but then when I saw him, although the face was pale, it seemed much bloated and swollen. The length of time he remained sensible is also another important point. This, from the patient's own account, must have been at least two minutes. He says, as soon as he swallowed the acid, he felt a dizziness, and he thought it would be over with him in a few minutes. He perceived himself becoming stiff, and his jaws getting tighter and tighter, and he put the sheet between his teeth, "that he might have something to hold by." He had no pain, but gradually became senseless; nor was he aware of anything until the water was dashed upon him, when the painful sensation it occasioned was beyond expression.

Again: the amount of acid taken is as large, if not larger, than any recorded as having been recovered from. It is well known that Scheele's acid ought to contain 5·16 per cent. of real anhydrous prussic acid, whereas some which I got from the druggist, out of the same bottle, contained only 3¼ per cent. Forty minims of this would be equal to nearly a *grain and a half* of real acid.

Lancet, Sept. 20, 1845, *p.* 315.

[A suggestion which appears worthy of consideration, is thrown out, that the stimulation induced by the gin might have a sort of neutralizing effect upon the prussic acid; and that the speedy access of the fatal collapse so marked in cases of poisoning by it, was thereby much prevented.]

70.— ON POISONING BY PRUSSIC ACID.

By H. Letheby, Esq., M.B., Lecturer on Chemistry at the London Hospital

[From an account of a case of poisoning by prussic acid, we extract the following, as being most interesting to the toxicologist.

A jewess, aged 22, of generally good health, was ordered a mixture, to take a fourth part twice a day, for a pain in her side: and a lotion for chilblains was also given to her at the same time, which contained nearly four grains of anhydrous prussic acid. By mistake the labels were reversed, and a quarter of the lotion, containing little less than one grain of the pure poison, was taken. Death ensued in from fifteen to twenty minutes.

Mr. L. obtained from the remainder of the lotion, amounting to about two ounces, 9·2 grains of cyanide of silver; this would indicate 1·85 grains of anhydrous prussic acid; and as half this quantity was taken, a dose equal to 45 or 50 drops of the medicinal acid, or 23 to 25 drops of Scheele's strength, were swallowed.]

This case offers many points of interest to the toxicologist, inasmuch as the dose was accurately determined; the effects were watched from the commencement; the post-mortem appearances have been carefully reported; and, from its being the result of accident, there is no reason why any of the facts should have been withheld or distorted. The principal points for consideration are the following:—

The Dose.—Here a little less than one grain of absolute hydrocyanic acid, diluted with one ounce of water, occasioned death in from fifteen to twenty minutes. It is the smallest fatal dose upon record; for although the Parisian epileptics are reported, in most of our works upon medical jurisprudence, to have been killed by about two-thirds of a grain of prussic acid, yet it is now proved beyond all doubt that they are in error, and that the quantity of anhydrous acid which each patient took was five and a half troy grains. We learn this from a letter recently received from Professor Guibourt, and published in the *Pharmaceutical Journal* for May. How so egregious an error could have crept into our English works is past my comprehension. In reasoning, however, upon the present case, it does not appear to me that we are warranted in supposing that one grain of pure hydrocyanic acid would, under *all circumstances*, be sufficient to cause death; on the contrary, the experience of almost every one, to say nothing of the cases which are upon record against this conclusion, would suggest that, in this instance, it was an unusually small dose for such a fatal event; and I am led to think that its potency was increased by the empty condition of diseased's stomach; for in the course of my experiments upon animals with this poison, I have invariably found that all circumstances which tend to debilitate the vital powers, such as disease, or blood-letting, or fatigue, or hunger, will enable a much smaller dose to become fatal, and which a vigorous animal might have swallowed with impunity. All that we can say therefore, upon this case, is, that one grain of hydrocyanic acid *may* occasion death; we go beyond our warrant when we say it *will*.

[The immediate cause of death seems to be stoppage of respiration by the spasmodic condition of the muscles concerned in that act. The slow laborious breathing, turgescence of the face and venous system generally, as well as the foaming at the mouth, support this opinion; and these symptoms so simulated epilepsy in the above that it was at first supposed she was labouring under such an attack.]

Lancet, June 7, 1845, p. 633.

71.—ON THE VALUE OF VACCINATION AND REVACCINATION.

[We have in former volumes given the opinions of different authors on the protective influence of vaccination. (*Vide* Vols. i. Art. 25, ii. 85, iv. 21, x. 106, and xi. 58.) M. Serres has lately presented to the Academy of Sciences, in the name of the committee appointed to decide on the merits of a number of treatises on this subject, a report from which the following is taken.]

Vaccination preserves the human species from variola, but its preservative power is not absolute. Variola itself, either spontaneous, or produced by inoculation, does not preserve absolutely from future attacks, therefore it is not extraordinary that vaccination should not. Thus, Mead mentions having seen three variolous eruptions take place successively on the same woman: the son of Forestus was twice attacked with variola, and Dehaen states that one of his patients was attacked six times by variola with impunity, but died of a seventh invasion of the disease. Although, however, vaccination is *sometimes* powerless to preserve us from variola, it *always* diminishes the gravity of the malady. This property, which Jenner and his first successors did not even suspect, is thoroughly proved by the various facts which have been recently accumulated. In one of the most terrible epidemics of variola that has taken place in Europe since the discovery of vaccination,—that of Marseilles, in 1828,—more than ten thousand persons were attacked. Of these, two thousand only had been vaccinated, and of that number forty-five only died, whereas, one thousand five hundred of the eight thousand who had not been vaccinated were carried off by the pestilence.

Vaccine matter evidently loses part of its efficacy in passing from arm to arm; it is therefore desirable to renew it as often as possible. A remarkable fact mentioned by one of the competitors, supplies us with a means of renewing it, as it were, at will. A cow was vaccinated with matter taken from a child. Not only did the pustules rise, but they were communicated to other cows, so that the cow-pox was observed nearly in its natural state. The pustules were identical in both cases.

The propriety of revaccination is now fully established. In Germany, the various governments have been induced to pay great attention to revaccination, owing to the circumstance of epidemics of variola having latterly manifested themselves with a severity to which we had become quite unaccustomed since the introduction of vaccination. Revaccination has, consequently, been resorted to on a very extended scale, and has had the effect of arresting the epidemics. Thus, in Wurtemburg, forty-two thousand persons who have been revaccinated, have only presented eight cases of varioloid, whereas, one-third of the cases of variola have latterly occurred on

persons who had been vaccinated. It is principally between the ages of fourteen and thirty-five that vaccinated persons are exposed to be attacked by variola. When there is an epidemic, the danger commences earlier, and children of nine years of age may be seized. Prudence, therefore, requires that, under ordinary circumstances, revaccination should be performed at the age of fourteen or fifteen, and four years earlier if within the radius of an epidemic of variola.

Lancet, June 21, 1845, *p.* 701.

[Dr. Stark has an admirable paper on the Cause of the Continued Prevalence and Fatality of Small-Pox, in the Edinburgh Medical and Surgical Journal, for July, 1845. In this paper the preservative power of vaccination is treated of, and we now lay his opinion s on the subject before our readers.

A review of the mortality from small-pox in many of the kingdoms of Europe, shows that it is still very prevalent and fatal, and that in several, and Great Britain in particular, it has rather increased of late. The importance of ascertaining the true cause is manifest, for unless we know the cause we cannot hope to apply the remedy. It is from mistaken ideas of the cause that so many theories have been started to account for this prevalence, as deterioration of the vaccine lymph, loss of its preservative power, &c.

Is it true that this prevalence and mortality is owing to failure in the protective power of vaccination? When vaccination was first introduced, it was said by the opponents of the practice, that its effects were merely temporary, and would wear out of the system in a few years, leaving it unprotected against the ravages of small-pox. It was said, again, ten years after, that the virus was manifestly decreasing in protective power, and that it would soon lose such power altogether. Even at the present day, some, with Dr. Gregory at their head, advocate the reintroduction of inoculation, on the ground that as many persons who have been vaccinated now take the disease as unvaccinated. We have however, approximative proof that the vaccine virus neither wears out of the constitution, nor yet degenerates by its numerous transmissions through the human subject.]

If, however, the protective powers of vaccination failed in ten, fifteen, or twenty years, by this time the whole of the adult population ought to be as liable to small-pox as if they had never been vaccinated; and, if the vaccine lymph degenerated after a period of twelve or twenty years, all those who had been vaccinated with matter which had been twelve or twenty years in use,—that is, all those under twenty years of age ought to be equally liable to an attack of small-pox. In fact, on this supposition the whole population ought to be as liable to an attack of small-pox as if they had never been vaccinated—the old, because by this time the protection afforded by one vaccination had worn out of the constitution—the young, because they were vaccinated with such exhausted virus, that it could afford no protection against small-pox for more than one or two years. What, however, is the case? Not only is small-pox rare in the adult over Britain generally, but the chief cases occur

among children under five years, in the very class who, according to any supposition, ought, *if vaccinated*, to be the most perfectly protected. Thus in the Registrar-General's Report of the mortality of England and Wales for the year 1838, it is stated that the ages of 8706 persons who died of small-pox was obtained, and it was found that no fewer than 7575 were under five years of age, and only 1131 above that age. The same conclusion is arrived at from consulting the able statistical report of Dr. Watt on the mortality in the large towns of Scotland, in the Transactions of the British Association, by which it appears, that over the whole kingdom the average per centage of deaths from small-pox is nearly the same for those under five years of age. Thus in 1839, in Manchester, 89·341 per cent. of those who died from small pox were under five years; in Liverpool, 85·328 per cent. were under five; in Edinburgh, 82·683 per cent.; in Glasgow, 85·729 per cent.; in Perth, 87·755 per cent.; and in Dundee, 85·258 were under five years of age out of every 100 who died of small-pox. The statistics of Ireland, again, exhibit this fact in a very striking light. In the "Report of the Commissioners appointed to take the census of Ireland for the year 1841," we find that, for the ten years ending 6th June 1841, no fewer than 58,006 deaths occurred from small-pox. Of these, however, no fewer than 49,038 were under five years of age, while only 8,968 were above that age.

These facts, therefore, prove approximatively that the protective power of the vaccine virus does not wear out of the constitution in ten or twenty years, otherwise the great mortality would be among adults and not among children. As we shall have occasion to notice afterwards, it is more than probable that the mortality from small-pox among children is from no failure in the protective power of vaccination, but from their never having been vaccinated.

It is necessary, however, in a rigid inquiry after truth, to ascertain whether a class of men who are properly vaccinated are thereby for ever after protected from the ravages of small-pox. Of only one class of men can it be said that means are taken to ensure that all are protected by vaccination from the ravages of that loathsome disease—I mean the military class. Let us see, therefore, how far they are protected from that disease, or whether, as they advance in years, they become more liable to be attacked by it.

From the Government "Statistical Reports of the sickness, mortality and invaliding among her Majesty's troops, extending from 1817 to 1836 inclusive, we learn that the dragoon regiments and guards, with an aggregate strength during that period of 44,611, and a total mortality of 627, lost only 3 cases from small-pox. The troops at Gibralter, with an aggregate strength during that period of 60,269, and a total mortality of 1291 lost only one from small-pox. In the West Indies the British or white troops, with an aggregate strength, from 1817 to 1836 inclusive, of 86,661, and a total mortality of 6,803, had not a single death from small-pox, though several epidemics of small-pox have ravaged the islands during that period. The black troops on the same station with an aggregate

strength during the same period of 40,934, and a total mortality of 1645, completely escaped that loathsome disease. At Bermuda, at Nova-Scotia, at New Brunswick, at the Cape of Good-Hope, and at the Mauritius, not a single death from small-pox occurred during these twenty years; and even the white troops of Western Africa wholly escaped this disease, which was carrying off hundreds of the black unprotected population.

[Similar observations are made by Dr. Stark respecting numerous other places, as Malta, Ceylon, Madras, &c.

Is not the neglect of vaccination the cause of the present extent and mortality of small-pox? The data on which the answer to this question is founded are few in number, but they are all the more valuable from not having been twisted to suit any particular theory.

In Marseilles, in 1825, M. Bousquet found that a fourth of the population was unprotected against the attacks of small-pox, consequently, when it appeared, the ravages committed by it were very great. From M. Villerme we learn that from 1808 to 1826, about half the children born in France, were vaccinated, thus leaving half the population exposed to the inroads of small-pox. The average annual mortality from this disease, in these years was 4832. These facts show, that in France, where vaccination is very zealously promoted by government, a very large proportion of the people neglect the blessings gratuitously held out to them. The mortality during the years mentioned was however but about the same as before the introduction of vaccination; viz. one in seven of those attacked. This fact of itself demonstrates that those attacked were such as had not been vaccinated.

From statements which the Dr. adduces, the only rational conclusion seems to be, that small-pox is kept up and its ravages extended by the neglect of vaccination.

Can we be surprised that small-pox should still continue its ravages when less than half of our lower classes are unprotected against it, when it is demonstrable that nearly all whoare not protected take it?]

Vaccination affords as perfect a protection from small-pox as it is possible to obtain,—as perfect immunity from danger as if the person had once passed through the natural small-pox.

[This is proved by the fact that, up to the year 1800, out of upwards of 6000 persons who were inoculated with the small-pox after previous vaccination, not a single one thus took the disease.

"But," say the favourers of inoculation, "this is not the case now. A person who has had small-pox, or been inoculated, is ever after free from all further chance of infection, or if he be again attacked, it is in an extremely mild form; whilst we frequently meet with small-pox occurring after vaccination, and it then proves quite as fatal as if the person had not adopted this precaution."

This Dr. Stark shows to be very erroneous, and advances against it the statistics of the London Small-pox Hospital, to which institution Dr. Gregory himself is physician. These shew that, of those who

had previously had small-pox 22·2 died in 100, while those who had previously been vaccinated died in the small proportion of 5·8 in 100. The authorities on this point are then ranged together, and their statements compared, from which it appears that, while those who take small-pox for the second time die in the average proportion of 15·7 per cent, those who take it after vaccination only die in the proportion of 3·3 per cent, on an average. The instances recorded prove that a second attack of small-pox is far from being very uncommon, and that, when it does occur, it is far more fatal than small-pox after vaccination.

The results of re-vaccination compared with the vaccination of those who had had small-pox, were, both in Hanover and Wurtemburg, exactly in the same proportion. From this we must conclude that vaccination gives as perfect immunity from a subsequent attack of small-pox, as if the person had once passed through the small-pox itself.]

More than this we can never ask—more than this we can never obtain. If the protective powers of vaccination wear out of the system after a certain number of years, which I most unhesitatingly deny, so do those of an attack of small-pox itself. And if theorists imagine and endeavour to prove that a person ought to be revaccinnated every twelve or twenty years, I hold it just as equally necessary that the person who has had small-pox be, after the same space of time, again subjected to that disease by means of inoculation, that he may not fall a victim to the disease, should he take it for the second time naturally. The latter proposition is so preposterous that I cannot imagine any one so obtuse as not to see its absurdity. And if it be so, certainly not less so is the proposal to revaccinate.

In conclusion, then it may be remarked that the above facts establish that the existing prevalence and mortality of small-pox is not owing to any failure in the protective powers of the vaccine virus, nor to its wearing out of the system after a certain number of years, but to the neglect of vaccination altogether; and that vaccination affords a greater protection from a fatal termination, should the individual be subsequently attacked with small-pox, than if he had passed through the natural or inoculated small-pox themselves.

Edinburgh Medical and Surgical Journal, July 1845, *p.* 137.

72.—REMARKS ON VACCINATION.

By Dr Cowan.

It has been observed that vaccination from old to younger subjects excites greater reaction than under ordinary circumstances; female children, and those of light complexion, are said to transmit a milder form of lymph than males and those of opposite temperament. The constitutional benefit derived from vaccinating a feeble from a vigorous child is asserted to be great, both in accelerating growth and apparently interrupting hereditary developments. The

popular impression, that different diseases are inoculated by vaccination, is considered as well-founded, and the selection of lymph from a young and healthy source should at all times be carefully attended to.

On the much debated question of revaccination, the Reporter advises its repetition in all cases at the age of seven; but that after the fortieth year it is unnecessary, reinfection from variola being almost limited to between the eighth and thirtieth years.

M. Bousquet thinks reinfection seldom occurs before the twelfth year, and is favourable to revaccination, while M. Gaultier de Claubry, from very extensive data, denies its necessity, and affirms the undiminished activity of the transmitted vaccine. M. Villaret, from observations on the French Army in 1839-40-41 and 42, advises revaccination every ten years. M. Lossetti, of Milan, has also instituted extensive statistical inquiries on the same subject, and says that we cannot deduce the probability of future infection from the character or number of the cicatrices. He also concludes in favour of revaccination; and from the analysis of 1411 cases affected with variola after vaccination, proves that the liability to reinfection is less limited by age than would be inferred from the Austrian Report.

It is too evident from the above brief statements that this important question is yet surrounded by difficulties; but it is equally a matter of deep congratulation that the inestimable benefits of Jenner's discovery are not dependent upon the issue of the discussion.

Dr. Cowan's Retrosp. Address, Prov. Trans. Vol. 1, *N.S.*, 1845.

73.—ON THE CO-EXISTENCE OF SCARLATINA AND VARIOLA.

By Robert Barnes, Esq, M.B.L., &c.

[A case of this description is given by Dr. Barnes, which commenwith general uneasiness, sickness, disinclination for food, and dysphagia.]

The diagnosis decided on, the first day, was scarlatina: the sore throat, red-tipped tongue, the blush over the chest and abdomen, and the prevalence of the fever in the neighbourhood fully warranted this. At the same time, the maculiform nature of the eruption arrested my attention, and I entered it in my note-book as an unusual appearance. Two days later, however, the spots had assumed an unequivocally papular character, and it became evident that variola was also present, although the patient bore the scars of vaccination. As the case proceeded, the scarlatina was lost in the predominating intensity of the variola; and it might now have been imagined that the poison of the former disease was eliminated from the system, while the varioloid poison was running its course alone: but presently, three weeks after the accession of the first symptoms, the occurrence of anasarca again asserted the continuance of the operation of the poison of scarlatina, leaving no doubt that the two morbid poisons had infected the system together, and had run their course concurrently. It would have been desirable to ascertain the

state of the urine, but this I was precluded from effecting by the negligence of the attendants.

In the course of the illness of the patient, another interesting circumstance occurred, which further tended to strengthen the opinion that the two morbid poisons continued to infect the system together. Twelve days after the accession of the attack, three sisters, all vaccinated, living in the same room, were seized with the usual prolegomena of eruptive fevers, and in due course the *modified variola* made its appearance, and went through its various stages, while another girl, residing in the same house, was seized, also on the twelfth day, with *scarlatina*. Of the three sisters, one had slight sore throat, in addition to the ordinary varioloid symptoms, so that it is not improbable that this one caught the double infection, for it does not appear that the occurrence of the rash is necessary to establish the presence of scarlatina. When, therefore, the period at which the variola appeared in the three sisters, and the scarlatina in the fourth girl, is considered, it may fairly be presumed that the first patient served as the common focus of contagion from whence the two diseases were propagated; that she not only laboured under the two diseases conjointly, but transmitted them separately to other individuals.

Lancet, June 7, 1845, p. 640.

74.—MODE OF PREVENTING PITTING IN SMALL-POX.

By Dr. Corrigan.

[Some years ago Dr. Corrigan was struck by observing that no part but the face and hands ever bore marks of pitting from small-pox. As it could not depend upon anatomical structure, it occurred to him that it was dependent upon the natural moisture of the rest of the body keeping the skin soft until new skin had had time to form under the pustule.]

Acting on this idea, I determined to apply something over the entire face, which should completely protect the pustules, and prevent their exposure to irritation of any sort, until they were detached by the formation of new skin underneath. For this purpose the application which suggested itself to me as likely to answer best, was lead plaster, melted with as much almond oil, as would allow the compound when moderately heated, to be spread over the face with a camel-hair pencil, and when dry to form a perfect mask of consistent firmness. This application can only act beneficially on the principle of oiled silk dressing, namely, preventing perspiration from the pustules, and preserving them free from irritation, until they become detached by the natural process of the formation of new skin underneath.

This mask is to be allowed to remain on, until the detachment of the scabs by the new skin brings it away with them. It looks to be sure very hideous for a few days, but I think that exemption

from permanent personal deformity is cheaply purchased at the price of an ugly face for some short space of time.

This is the remedy, which, from extensive personal experience of its efficacy, I would be inclined to recommend for adoption. From the time the small-pox pustules are fully formed, coat them over with this application, and allow it to remain undisturbed, until the formation of new skin underneath disturbs it. By adopting it, I can confidently promise you the gratification of sparing your patients the grevious amount of deformity, which the numerous cicatrices of small-pox must otherwise inevitably produce.

Northern Journal of Medicine, July, 1845, *p.* 120.

75.—TREATMENT OF PURPURA HÆMORRHAGICA, BY TURPENTINE.

By J. M. Neligan, Esq., M.D, &c.

[There are practitioners who still consider purpura hæmorrhagica closely allied to sea scurvy, and treat it accordingly by tonics, bark, wine, &c. Others again, viewing it as always of an inflammatory nature, employ venesection Dr. Harty, of Dublin, found calomel and jalap in purgative doses efficacious in its treatment, and on some cases coming under Dr. Neligan's care, he was induced to try it on two of the patients. He had previously failed in two cases with tonics, and the like ill-success attended the purgative plan with one patient, an old man; the second, a young man of better constitution, recovered under their use.

Dr. Neligan was thus led to doubt the efficacy of tonics, and more inclined to rely upon purgatives; at the same time it occurred to him to try turpentine, which while it acts as a cathartic, possesses also the property of checking hæmorrhage dependent on an atonic state of the capillaries. In four cases which afterwards came under his care, he "prescribed the oil both in the form of draught and of enema; the usual dose for adults being from one ounce to an ounce and a half, and for children from two drachms to half an ounce, generally in combination with castor oil, to render its cathartic action more certain," and every one recovered.

In the first case the purpura occurred four days after exposure to the contagion of scarlatina; the patient was in a very depressed state, and had sore throat. The report is that]

Anne Welby, a remarkably fine-looking child, six years of age, was admitted into Jervis-street Hospital on the 11th of April, 1843. She is robust, but very pale, and her countenance has a most languid and anxious expression; the lips and nostrils are covered with blood of a dark colour, which has coagulated over them, and blood is oozing slowly from the margins of the gums; an eruption of small, circular spots, about two lines in diameter, and varying in colour from a blackish purple to the hue of arterial blood, is thinly and pretty uniformly diffused over the whole body; the spots are nearly

all of the same size, and perfectly circular, but a few closely resemble vibices both in colour and outline; the colour of the eruption is not in the least affected by pressure, nor by the part of the body on which it occurs; a few spots are sensibly prominent, and there are also some which are mere bloody vesicles, and which rupture under slight pressure with the nail; one or two spots are situated on the red margin of the lips, as well as on the mucous membrane of the mouth; the tongue is moist and slightly furred, and the papillæ, which are red and prominent, give it a mottled appearance; the fauces are very red, and the right tonsil considerably enlarged, puckered, and of a deep brownish red colour; the pulse 120. small and hard; the respiration quiet, and there is no cough or expectoration.

[Turpentine and castor oil, three drachms of each, were ordered to be given immediately, to be repeated at bed time if the bowels had not freely acted previously. Both doses were rejected by vomiting; a calomel and scammony powder were therefore given, but without effect. Half an ounce of turpentine with the same of the oil, were exhibited in the form of enema, and a large quantity of feculent matter mixed with blood brought away.]

The improvement in the appearance of the patient is of the most marked and decided character. The countenance has partially regained its colour and animation, and the patient is sitting up in bed, amusing herself, and readily answering questions. The pulse is less frequent and not so hard; the tongue quite clean and moist; skin cool. No new spots have made their appearance, and those which were previously present have become much darker coloured.

℞. Olei Terebinthinæ; Olei Ricini, āā ʒ ii.; Decocti Hordei, ℥ x. Fiat enema, semel vel bis in die injiciendum.

[The enemata were repeated, and by the 24th the patient was considered well enough to be discharged. On the 2nd of January, 1845, she was readmitted with a second attack, but of a milder character than the first.]

The oil of turpentine was administered to her in the form of draught, uncombined with castor oil, the quantity prescribed being two drachms night and morning, for five successive days; it was given floating on the surface of peppermint water, in which form it was retained by the stomach, and produced from three to four stools daily. She was quite well on the 7th instant, the sixth day after the appearance of the spots, but she was kept in hospital until the 12th of January, for fear of a relapse.

[The second case in which it was tried occurred to an adult.]

William Flannagan, aged 50, a labourer, admitted into Jervis-street Hospital July 1st, 1845. The entire of the body and limbs is covered with small circular spots of various size and colour; from half a line to a line in diameter, and varying in colour from the florid red of arterial blood to a purplish-black hue. There are also

several large, ecchymosed patches of a deep greenish-purple colour; these are situated chiefly on the right mamma, the elbows, the loins, and the backs of both legs. Firm pressure produces no effect on either the small or large spots. He complains very much of weakness, with pain in his back, which, together with a feeling of great lassitude, has, from the commencement of his illness, altogether prevented him from working. He is constantly coughing up a frothy serum, deeply tinged with blood; the gums also bleed slightly, and he states that, previously to his admission into hospital, he passed bloody stools. The pulse beats about 60 in the minute, but is feeble and very compressible. The body is emaciated, and the countenance very expressive of anxiety.

[An ounce and a half of turpentine was ordered, in a draught, which produced slight intoxication, and purged and vomited him freely. The stools were mixed with grumous blood, but he was much relieved by them, and the large purple blotches soon began to fade, and turn of a yellowish green, whilst the small spots gradually disappeared. The same quantity of turpentine was administered in an enema.

The following day he was better in every respect, except that the sputa was still more bloody. The bowels had only been once moved by the enema; there was no blood in what was passed. The draught was repeated, with only an ounce of turpentine. The patient continued to improve, the bloody character of the sputa ceasing, and was discharged cured on the 12th, with all traces of the stains removed.

The third case was of a delicate child of five years of age.]

After two days' slight fever, the entire body became, in one night, thickly covered with spots of purpura, while two large vibices were apparent on the nares, evidently produced by the pressure of the body on that part; the bowels were free, but the stools consisted of feculent matter, intimately mixed with blood. The oil of turpentine was administered to her in the form of draught, in doses of two drachms and a half twice daily. She was only five days confined to bed, and on the sixth day scarcely a trace of the disease could be perceived on any part of the body.

This case I look on as being particularly interesting, when considered in connexion with that of Welby, the first case I have related in this communication, inasmuch as this was an exceedingly delicate child, of a rather strumous habit of body, while the girl Welby was a fine, healthy-looking child, with, after her recovery, a very florid complexion. It thus appears that this mode of treating the disease is equally applicable when it occurs in the robust as in the debilitated, a fact which is fully borne out by the experience I have had of it for the last five years.

Dublin Journal of Medical Science, Nov 1845, *p.* 189.

76.—TREATMENT OF PURPURA HÆMORRHAGICA BY LEAD.

By John Hogg, Esq., M.D.

[Ten days before Dr. H. saw the patient in this case, she had caught cold, with relaxed sore throat and cough. Eight days after, petechiæ appeared on the legs, and thence spread over the surface of the body, face, and arms, but caused no inconvenience. When seen on the 21st of April, blood in considerable quantity was proceeding from the nose, fauces, and throat; ecchymoses on the roof of the mouth; purple spots now over the whole surface of the body, mouth, and lips; the blood flows constantly from the nose and mouth, to the extent of half a pint in twenty-four hours. Bowels regular; pulse 72, rather feeble. Ordered,

Quinæ disulph, gr. iss.; Acid sulph. dil. ʒ ss.; every four hours in Infus aurantii.

An alum gargle was also directed to be used; recumbent posture and generous diet prescribed.

On the 23rd the hæmorrhage was increasing, and likewise the colour and size of the spots. She had passed a sleepless night from the bleeding; pulse 84, feeble. The quinine draught was omitted, and an effervescing mixture, with nitrate of potash substituted. Diet to be reduced, and sub-acid drinks and fruits to be taken.]

24th.—Symptoms all aggravated. Hæmorrhage from the nose, mouth, and throat, excessive; ecchymoses in the mouth, on the gums, and especially on the soft palate, very large, one as large as a shilling; the blood congeals about the gums, teeth, and fauces, and also flows perpetually; the spots increased over the whole body, especially on the face; much apprehension of suffocation. The strength is quite prostrated; appetite entirely gone, and great difficulty in swallowing even fluids; pulse 112, very weak; bowels opened by an aperient taken last night, evacuations consisting chiefly of blood; urine remains clear, but is dark coloured; breath very offensive. Continue gargle; omit the effervescing draught. Take acetate of lead, three grains; acetate of morphia, half a grain; vinegar, one drachm; distilled water, ten drachms; make a draught, to be taken at bedtime. Repeat the draught, without morphia, every four hours. Let her take three drachms of castor oil in the morning. To take as much beef-tea as possible, and to continue the oranges and lemonade.

[Next day the hæmorrhage was unabated, and the strength very much reduced; pulse 120, small and weak. A calomel powder given instead of the oil, and the acetate of lead draughts continued. Vomiting of blood and mucus came on: bowels evacuated four times, more than half blood. A turpentine draught ordered in the evening, which caused great loss of blood, in all directions. Lead draught at bed-time.

The symptoms now abated somewhat; on the 26th the hæmorrhage was less; pulse under 100; appearances improved and spirits better; mouth and fauces still loaded with coagula; bowels once opened, sparingly. Draughts continued, with four grains of acet. lead in each.

27th. Hæmorrhage nearly ceased; exhausted from want of rest; pulse 112, feeble; bowels not opened. Tartaric acid in infusion of roses ordered instead of the lead draught; castor oil every six hours, and hyd. c. cret. gr. x. at bedtime.

The three following days, she improved progressively, but on the first of May, epistaxis returned and nearly a pint of blood was lost; little blood in evacuations; pulse 104, weak; great exhaustion. Dilute sulphuric acid was again ordered, and she was bled from the arm to three ounces. Spirit lotion applied to the temples, as there was great disturbance of the sensorium, and strong mustard poultices to the feet. The blood drawn formed a glue-like mass, very firm, and translucent.

On the 4th profuse hæmoptysis, with a return of the dangerous symptoms. Bled from the arm to three ounces, and sinapisms applied to the feet, chest, and throat. The blood drawn formed a mass of glue-like fibrin; pulse 100, weak and small. Rose draughts with epsom salts to be continued.

The day following the bowels were freely moved; evacuations very dark. She felt better, could eat some grapes; pulse 94, soft; no palpitation or irregular action of the heart. She gradually improved and in three weeks left her room, walking steadily. Dr. Hogg makes the following remarks on the case:]

The mystery which overhangs this disease was not materially lessened by the observations made in this case. Although it is supposed to originate in passive hæmorrhage, in debility of the venous system, or capillaries, the blood itself appears greatly deteriorated, and this may possibly be the first origin of the mischief. From the commencement of the attack not less than a gallon of blood was lost, and yet the abstraction of blood from the arm was called for by an overloaded state of vessels at the time it was employed. Whether venesection gave relief in this manner, or by the removal of a noxious vitiated fluid from the system, it is difficult to say, but that relief was afforded by the operation is certain.

From closely watching the phenomena of the disease, it further appears that a congested state of the liver is concerned in it, and on this ground the exhibition of alteratives, as recommended by Willan and Bateman, was attended with decided advantage. The general treatment was directed, in reference to the symptoms, in the absence of correct data as to the cause of the disease. I am not aware of lead having been employed before, but from its effects in this case I should say it deserved to be ranked amongst the most valuable of remedies; about two scruples of it were taken without any symptom of colic, or other inconvenience supervening, if we except the tinnitus aurium, and the partial and temporary loss of the powers of articulation, which were probably attributable to its influence.

Dr. Watson saw the patient twice, and it was at his suggestion that the first bleeding was had recourse to.

On the whole, it appears a disease of debility, aggravated by derangement of the liver, and requires the ordinary counteracting remedies for its cure.

Lancet, July 19, 1845, *p.* 70.

[Dr. Ross, late physician to the Suffolk Infirmary, doubts whether the cure in this case should be attributed to the lead employed; on the contrary he rather thinks that the symptoms were aggravated by it.

In a similar case, with hæmorrhage from various organs, and great prostration, ergot of rye in infusion of roses was suggested by Dr. R.]

The use of this combination was immediately commenced, and continued for some days, in the dose, as far as I remember, of five grains of the powdered ergot, and an ounce of the compound infusion of roses, every four hours, with a generous diet. Under this treatment, with the addition of some aperient when necessary, the case went on with great rapidity to a favourable termination, without a single untoward symptom occuring to interrupt its progress.

[If further trial should confirm this view of the styptic powers of ergot, it is probable that it would be of benefit in sea-scurvy and other passive hemorrhages, caused by a morbid condition of the blood.]

Lancet, August 2, 1845, *p.* 127.

77.—REMARKS ON DIGITALIS PURPUREA.

By Dr. Houlton.

[Dr. Houlton says that he could not find any satisfactory account of the different varieties of Digitalis Purpurea in any work on Botany or Materia Medica. The most useful variety, and that which should be selected, he states to be *purple on the stem, and under the leaves.* As it is a biennial plant, and the leaves of the second year are alone of value, the following directions are given to enable us to select such.]

The leaves of the different years' growth are not to be distinguished by shape; on both plants we find leaves varying from the ovate to the lanceolate shape; the upper leaves of the stem are always lanceolate. A practised eye can distinguish these different leaves, but it is difficult to give any sufficient rules on this point. If detached leaves are brought with a strip of the bark of the stem attached to the footstalks, they are second years' leaves; there being no stem in their first year, the first years' leaves are, or were, usually brought to market in tufts, from being attached to the crown of the root, the fibrous parts of which were usually removed by the collectors.

It is of importance to know that the first year's leaves are of considerable size when the second year's plant is in perfection; this is not the case with some biennials—as hyoscyamus niger. We cannot procure the first and second year's leaves of this plant at the same period, in their natural mode of growth. The parts to be employed in medicine, named by authors, are the root, leaves, flowers, and seeds.

Should any one wish to employ the root, the rule given on various other occasions should be borne in mind—viz., that the roots of biennial plants are to be collected in the autumn or winter of the first year of their duration. This rule he had never seen in any books, but it is an absolute one. Dr. Withers mentions, that Dr. Crawley, of Cambridge, was cured empirically of hydrothorax, by the root, after regular practice had failed. The leaves of this plant, like the leaves of all biennials, should be gathered in the second year of their duration, and as soon as possible after the first flowers have expanded. The plant with a purplish stem should be selected; the leaves, after removing the midrib, should be carefully dried, without the aid of artificial heat; no rule is mentioned for the collecting the flowers and seeds. In a work of distinguished rank, it is asserted, that as digitalis is a biennial plant, its leaves may be procured at any season of the year. Now this is, not from its being a biennial merely, but from the circumstance of its being a very early biennial. The leaves of biennial plants die in the winter; in mild winters and in sheltered situations, the leaves of digitalis will remain through the winter. Leaves have been offered for sale as digitalis which were those of verbascum nigrum; they have much of the general appearance of digitalis leaves, and might deceive the unwary. Other species of verbascum have leaves somewhat similar to those of digitalis. The usual preparations of the leaf are, the powder, tincture, infusion, fluid-juice, and extract. He saw no need of any others than the powder and the tincture; the more simple we kept our vegetable pharmaceutical preparations the better. It is worth noticing, the changes that have taken place in the preparations of the tincture and infusion in the present Pharmacopœia; they are both weaker than in the former Pharmacopœia. The relative strength of the two tinctures is as $8\frac{1}{2}$ to $10\frac{1}{2}$; and that of the infusion as $8\frac{1}{2}$ to 21. Here is a great difference: it is important to bear this in mind when we compare the practice of authors who wrote previously to 1836, with those who have written since. The infusion of the present Edinburgh Pharmacopœia is double the strength of that of the London.

Lancet, July 26, 1845, *p.* 103.

78.—IPECACUANHA IN EMETIC DOSES, A RESTORATIVE IN CASES OF SINKING, &c.

By John Higginbottom, Esq., Nottingham.

[Mr. H. first witnessed the good effects of ipecacuanha as an emetic in a woman sinking in the last stage of cholera. Having lost two patients in a similar condition to whom he had given opium and brandy, he was induced to try ℈j. of ipecacuanha as a last resource, from having seen it of benefit in the early stages. Two or three hours after, when he again saw her, the warmth of the body was restored, the dangerous symptoms had disappeared, and she was soon convalescent.]

My confidence in the ipecacuanha, as a remedy in such cases, has now been confirmed during the practice of thirty years: the purging, vomiting, and cramp, often entirely cease after the emetic operation of the ipecacuanha, but I have thought it proper to give, in about two or three hours after the emetic, a pill, with a grain of opium and five grains of the blue pill, to allay any remaining irritation of the stomach and intestines, and an aperient, with one scruple of rhubarb and two of the sulphate of potash, to assist the natural action of the bowels, and a simple saline effervescing draught every two or three hours afterwards; weak tea, well-boiled gruel, milk, with sago or arrow-root as nutriment, and diluents.

UTERINE HÆMORRHAGE.

The next case which attracted my particular observation, was the utility of ipecacuanha in severe uterine hæmorrhage. I attended the patient three times in labour, in the years 1821, 1823, and 1826, and each time with most severe flooding immediately after the separation of the placenta. I employed the usual remedies, such as the sudden application of cold water to the abdomen, pressure to cause contraction of the uterus, with the administration of opiates, wine, and brandy, which were at that time common remedies. These were cases of great anxiety, and I had to remain with my patient several hours before it was safe to leave her.

In her third confinement, I was afraid she would die. After having used all my remedies, and having given her half a pint of brandy and a pint of port wine, which was of no avail, it occurred to me, that in the former cases in which I had attended her, when I had used the same means to check the hæmorrhage, that there was no amendment until she had ejected the contents of the stomach. I was, then, most anxious that vomiting should take place, in hope of relief, as she was rapidly sinking. I thought that as vomiting had been so beneficial to her before, I was in this case justified in producing it by giving an emetic. I directly gave her half a drachm of ipecacuanha; a full vomiting soon succeeded, and a large quantity of fluid was ejected. I was much struck with an expression of my patient, which I had several times before heard in similar cases, after vomiting. After a deep sigh, she said, "Oh! I'm better; I'm better now." The hæmorrhage ceased directly, and did not return; the symptoms of sinking abated, and the patient appeared in her natural state of body, but very feeble. A little plain gruel was all the nutriment given her, and she recovered gradually from her weak state. I attended the same patient three times afterwards, in the years 1827, 1829, and 1831, and what is very satisfactory in favour of the secale cornutum, which was about that time becoming more used in this locality, I gave, in every case, half a drachm of the powder before the birth of the child, and a second such dose after the birth, before the separation of the placenta. This remedy had the desired effect of preventing the hæmorrhage, so that I had no further need of the ipecacuanha, or, indeed, of any other remedy.

Several years ago, I had a patient, on whom the secale cornutum

had no effect in preventing the hæmorrhage, and I gave the ipecacuanha with a favourable result.

For nearly twenty years, I have lost all confidence in the diffusible stimulants, such as wine, brandy, &c. in uterine hæmorrhage, from a conviction that they increase the arterial circulation, and, consequently, the hæmorrhage, and I find that opinion corroborated by the writings of Drs. Clutterbuck and Ramsbotham.

The utility of ipecacuanha in uterine hæmorrhage has been proved by Dr. Osborn of Dublin, but I am not aware that he has recommended it in extreme cases of exhaustion or sinking.

BRONCHITIS.

I have found an emetic dose of ipecacuanha a very valuable remedy at that stage of bronchitis where on a sudden, low, or sinking state has come on with oppression at the chest, and the expectoration difficult, endangering suffocation. Vomiting with ipecacuanha has not only soon relieved these symptoms, but has roused the whole system, and has produced such a decided change, as to render the patient convalescent in a few days. I have never seen the same good effects in such circumstances produced by any other remedy.

[A writer in the Med.-Chur. Review recommends that emetics, especially of ipecacuanha, should be more frequently used than they are in the present day, for, says he, "an emetic will often effect more good in the course of a day or two, than other remedies in a week or two."

A patient of Mr. H.'s, after an attack of puerperal convulsions, for which twenty ounces of blood were taken from the arm, was exceeding low, but gradually recovered in eight or nine days. About the ninth day severe pain in the course of the colon was complained of. Mustard poultices were applied, and active purgatives given, with benefit, but continued vomiting came on, attended with considerable lowness. Injections of beef tea, containing ℥ss of turpentine each, were thrown up every four hours; a blister was applied to the pit of the stomach, and gruel given as most likely to stay on the stomach. The vomiting still continued; the turpentine injections occasioned much pain after they were administered, and the exhaustion and sinking increased to a very alarming extent.]

In this case it occurred to me that an emetic dose of ipecacuanha was the most probable remedy to rally the sinking powers, and with the concurrence of Dr. Hutchinson, I gave half a drachm, and remained with her during its operation. A fuller vomitting was produced than I could have expected; although it was small in quantity, yet it occurred to me that the natural effort had long been exerted in vain to accomplish what the ipecacuanha directly effected—that of completely emptying the stomach. I remained with my patient an hour, and left her somewhat better. After I had gone she turned herself on her left side, and remained so still for several hours as to alarm her husband, who sent for me directly, fearing she was dying. I found her pulse much improved; she was still lying on her left side; the sickness had abated. A little plain

gruel was given, and a half-pint injection, with equal parts of milk and gruel, was administered every four hours. A slight vomiting came on after this time, but did not continue; her appetite improved so much that there was a difficulty in restraining her from taking improper food, such as beef-steak, &c. Her stomach was disordered twice during her recovery from this cause, so as to require two emetics of ipecacuanha, which were given with advantage. The patient fully recovered, and is now in her usual health.

I was impressed in the above case, not only with the great value of the ipecacuanha, but also with the benefit arising from the glysters, in conveying the nourishment to the system when in an anæmiated state, and when food could not be received or retained in the stomach; indeed, I have often thought, from the great absorbent power of the colon, that glysters might supersede the necessity of transfusion.

Lancet, June 28, 1845, *p.* 732.

[Mr. Archibald Blacklock, of Dumfries, writes that he has for many years followed the same practice, both before and after removal of the placenta, with marked and decided benefit. Mustard, however, is the emetic he uses, as it acts speedily and freely, and leaves little or no nausea, or exhaustion behind.

He was first led to try the effect of vomiting in uterine hæmorrhage by reading an extract of a letter from Mr. George Williams, in the Medico-Chirurgical Review for 1820, in which the writer says]

"That he excited vomiting by irritating the fauces when the uterus contracted powerfully and expelled several coagula; in short, the patient returned to life, and did well," Mr. Williams asks, "did the percussion of the effort to vomit stimulate the uterus to contraction? Would it be safe practice, in cases of uterine hæmorrhage, to excite vomiting to obtain this end?" And he adds, "It is a most powerful means of bringing on reaction, as we often see in performing venesection; for the patient being faint, the stream of blood falters; but no sooner is vomiting excited, than the colour returns to the pallid cheeks, and the blood (almost as florid as arterial) rushes impetuously from the orifice." I have no personal acquaintance with Mr. Williams, but, at the time the extract from his letter was published, he was practising at Portsmouth or Portsea.

It is to be regretted that the profession is still so much divided in opinion as to the propriety of exhibiting diffusible stimulants in uterine hæmorrhage, occuring soon after the expulsion of the child; but I think that this difference of opinion is chiefly owing to many *confounding hæmorrhage of other kinds* with *that from the uterus after delivery*. In the *latter* case the bleeding is not arrested, as in the *former*, by the formation of clots in the vessels from which the blood issues, (which process is always facilitated by whatever reduces the heart's action, but principally, if not entirely, by the firm and permanent contraction of the uterus—a *powerful muscular organ, in the structure of which the bleeding vessels are situated*. Whatever

tends to debilitate the muscular system, has a tendency at the same time to lessen the contractile power of the uterus, and this more particularly immediately after the birth of the infant; and stimulants of all kinds, when properly administered, have just the opposite effect. Do not suppose, however, from this, that I am an advocate for the use of stimulants, either during or after labour, under ordinary circumstances; on the contrary, no person can be more opposed to their indiscriminate use than I am, and always have been.

Lancet, July 19, 1845, *p.* 80.

79.—ON THE USE OF CONIUM.

By J. Moore Neligan, M.D., M.R.I.A., &c.

[In Retrospect Vol. 10, Article 43, will be found a notice of a paper which was published by Dr. Neligan on the best modes of preparing and administering conium, with his experience on its use. He there states that he had found it most beneficial in obstinate rheumatic pains, severe chronic arthritis, subacute rheumatism of the muscles of the leg, and facial neuralgia.

Since his first publication he has used it most extensively in the treatment of chronic rheumatism, and his subsequent experience inclines him to speak still more favourably of its use in such cases. He says.]

I have of late been in the habit of prescribing the *Succus Conii* in the form of mixture, ordering half an ounce of it to be mixed with seven ounces and a half of camphor mixture. Of this mixture the patient takes at first half an ounce, that is fifteen minims of the hemlock juice, every fourth hour. We are thus enabled to increase the dose very gradually, until the constitutional effects are produced; and moreover, we avoid the uncertainty which always arises from allowing patients or nurses to measure medicine by drops.

[The following case is quoted in illustration. R. N. æt. 28, a servant girl, had always had good health till her sixteenth year. She then became affected with pains in her joints, and numbness, at first of the left arm only, subsequent to exposure to cold and wet. These pains gradually attacked other joints, causing intense agony; they swelled, and caused a gritty sensation when moved; she also partly lost the power of moving them.]

On admission the affected joints presented the following appearance. The hip joints, which were the first affected, were almost immoveable; the process of abduction being nearly impossible owing to the bony deposits on the outside of the joints. The knee, shoulder, and elbow joints, were very much swollen, and their power of motion considerably diminished; so much so that she was unable to extend her legs, which were semiflexed, nor could she raise either of her hands to her head. The least motion of the affected joints caused a gritty sensation to the hand placed over them, and in the knee-joints could be distinctly heard. The wrists and the articula-

tions of the fingers presented the greatest alteration of structure, being nearly all of them displaced from their natural positions, in consequence of which they have a very distorted appearance. At the junction of the ungual with the first phalanx of the thumb of the right hand, the ends of the bones are partly absorbed, and she is obliged to tie a bandage round the joints to keep the thumb in its place. Besides the enlargement of the epiphyses of the bones, there is a gelatinous effusion surrounding most of the joints.

[She was kept in hospital about two months, under the continued action of hemlock; its constitutional effects, of dryness of the throat, with a sense of constriction, and pain in the act of swallowing having been four times produced. On the day of her discharge the report states that,]

The swelling has completely disappeared from her knees, so that she is able to straighten her legs, and to get in and out of bed without assistance, although she is unable to walk alone more than a few steps. She is able to raise her hands to her head, and, to use her own words, "to turn up her back hair," which she was unable to do for the last ten years. She is also able to use her needle, and to work for a long time without being fatigued, having completely dispensed with the bandage on her right thumb for the last three weeks, it has become so strong. She is also quite free from pain, and is discharged at her own request, Dr. Neligan's term of attendance at the hospital having expired.

Dublin Journal of Medical Science, Nov., 1845, *p.* 189.

80—ON NITRIC ACID IN DISEASES DEPENDENT ON VASCULAR DEBILITY.

By J. S. Wilkinson, Esq., London.

[Mr. Wilkinson acknowledges that mercury is the only remedy to be relied on in cases truly venereal, but contends that nitric acid acts almost as a specific in many diseases of a suspicious character, dependent upon vascular debility. The remedy, he remarks, is by no means new, but it has not been properly understood; that it has cured many cases for which he recommends it, there is abundance of testimony on record. He says,]

I was first led to the trial of nitric acid, as an internal medicine, by observing its effects when applied externally to ulcers and inflammatory surfaces, when the blood vessels had undergone some morbid change. In varicose veins, if a piece of lunar caustic, the basis being nitric acid, or nitric acid not too strong, be drawn along the distended vessel, it will penetrate the skin, and in three or four days the vein will be reduced in size, and the morbid inflammation and pain removed, or, at all events, considerably lessened. In varicose ulcers of the legs, where the surrounding parts are of a livid or bluish cast, a solution of nitrate of silver or nitric acid will often cause the vessels to shrink, assume a healthy condition, and ultimately disappear. Of course, if any

mechanical obstruction, such as pregnancy, exist, or the valves above be diseased, these circumstances must be taken into account, and the cause, if possible, removed. If the liver and kidneys do not perform their office, these secretions must be attended to. The application of bandages is known materially to assist, when the patient can bear pressure. In caries of a tooth, if a drop of pure nitric acid be introduced into the hollow of it, the disease is immediately arrested, and the pain ceases. I have tried this repeatedly, and almost always with success ; but much depends upon the state of the liver and intestinal canal at the time, which, if disordered, tends to keep up the morbid inflammation in the parts.

The inference I drew from these observations was, that if nitric acid could be introduced into the system in sufficient quantity, in cases where the blood vessels were in a debilitated or distressed state, so that the circulation might be in a manner saturated, and the extreme arterial and venous branches affected, similar results might be accomplished where a more general and constitutional disorder existed.

[The first patient in which he tried it, was labouring under dropsy of the abdomen, with diseased liver.]

His countenance was sallow and shrunken, his abdomen and legs swelled to an enormous size, the latter resembling in shape the limbs of an elephant. His scrotum hung half way down his thighs, and the skin of his penis was distended to the thickness of a man's arm. His pulse was small and weak, and beat not more than thirty strokes in a minute. His history was soon told. He had been a constant frequenter of a public house, had been ill about two years with diseased liver, and then dropsy had supervened about ten months before paying me his first visit.

[He was ordered six grains of calomel and ten of colocynth at bed time, which brought away two motions, resembling melted pitch. The dose was repeated ; two motions like the former followed, a third was brown and looser. From his uneasy state and difficulty of breathing, a trocar was passed, and a pail and half of highly albuminous fluid drawn off. Hyd. ca cret., cream of tartar and jalap, at bed time, produced a watery evacuation, containing yellow bile.]

I now determined to give the nitric acid, beginning with thirty drops of the dilute every four hours, in a glass of decoction of cinchona. This was increased ten drops per diem, till he took 250 daily, and continued it for two months. The dropsy had entirely disappeared, and his pulse risen to 90 in a minute, and full. The secretion of bile and urine had returned ; he could eat a beef-steak for breakfast, and was ready for another before his accustomed hour of dining, which was one o'clock. In less than six months he was as fat and as well as ever he had been during his life. The most singular part of this case is, that my patient afterwards re-

turned to his old habits of drinking, but, I believe not to his former excess. I saw this person three years afterwards ; he had no return of his complaint whatever. He took the nitric acid nearly three months. There is one thing here I wish to point out—viz., that in all cases of obstinate obstruction of the liver, a large dose of calomel must be given ; small doses are worse than useless.

[In conclusion, Mr. W. says,]

I make it a practice of giving the nitric acid and bark before and after operations for scirrhous breast, in chronic erysipelas, and immediately after the acute stage of that disease ; in debility, after an attack of gout, and in most nervous diseases ; in extreme old age I have found it increase the appetite, raise the spirits, and induce sleep, where opium and other narcotics have tended to keep up the disorder they were intended to remove. In valvular affections and enlargement of the heart by dilatation, I have found the most decided benefit, especially if the liver performs its office tolerably. Of course, in such cases as the last, a cure could not be expected or even looked for, and I have seen quite enough of digitalis to discard it *in toto*. If the nitric acid is taken for some time, it raises the pulse, renders it fuller, but deprives it of its wiry hardness. It does not destroy the teeth, like the other mineral acids, nor turn them black. I have never seen it produce salivation, but it will cause great redness of the mucous passages, the tongue and fauces.

Lancet, July 19, 1845, *p* 65.

81.—ON THE TREATMENT OF DISEASE BY MOIST AIR.

By Golding Bird, A.M., M.D., &c.

[Dr. Golding Bird read to the meeting of the Medical Society of London, an account of a mode of treating diseases by moist air, which, though old enough in principle, presents some novelties in the plan by which it is carried out. After remarking on the great importance of attending to the state of the skin, particularly in congestion of internal organs, he proceeds]

Selecting, if the choice be permitted, a bedroom as small and as free from draughts as possible, the windows are carefully closed, and if the casements do not fit accurately, strips of paper should be pasted over the junctures. A stout sheet or blanket should then be fastened with a nail or two to the lintel of the door outside, so as to hang down and prevent currents of cold air entering the room during the ingress or egress of the attendants, a large fire being lighted in the grate, which should never be allowed to go out during the treatment. A thermometer should be suspended over the patient's bed, so as to be about two or three feet from its centre, and carefully watched : the indications of this instrument should be the sole guide for raising or depressing the fire, and a

temperature of from 70° to 78° should be constantly maintained. A large kettle of water is placed on the hob, and kept boiling, so that a current of steam may be constantly poured into the room from its spout, which, for this purpose, must be elongated by the addition of a few feet of gas-pipe; and until this be procured, with a tube of stiff paper, or thin mill-board.

By these precautions, the room may, without the slightest difficulty, be kept at a nearly constant temperature for the requisite time. Indeed, it is remarkable how little variation is observed in the thermometric indications, when the most ordinary care is taken to prevent the entrance of long-continued draughts of air. Let us now suppose that a child, the subject of capillary bronchitis or pneumonia, be exposed to the influence of a bed-room arranged with these precautions, placed in bed, and supplied freely with diluents, as tea, toast-water, or common water, for which the little patients generally crave, and inquire what are the probable results of this treatment, independently of any other.

The first thing observed, generally, is a slight diminution in the rapidity of the respirations, which, for the most part, assume soon a less panting character; this may be accounted for by the more soothing effect of a genial temperature on the surface of the body; and by the warmer air inspired proving less stimulant to the lungs; and, contemporaneously with this, the cough, if present, diminishes in frequency and violence.

In a short time afterwards, the surface of the body, especially the extremities, if previously cold, as in suffocative pneumonia and bronchitis, become warmer; but if previously pungent and hot, they become moist, and in both cases a free perspiration bursts out, and continues in most cases for days. Should this not occur so soon as is wished, enveloping the chest in a large and thick hot linseed-meal poultice will generally turn the scale in favour of diaphoresis. It is here, indeed, that we find the advantage of rendering the air of the room moist by the evaporation of water. If mere dry air, of the temperature of 75°, were allowed to exert its influence on the parched skin of acute pneumonia, it seldom, if ever, excites perspiration; the orifices of the spiral sweat-ducts seem closed against the escape of perspired fluid—nay, it is not uncommon to thus meet with a sort of false miliary rash, really being sudamina, each formed by a drop of sweat imprisoned by the cuticle.

[Some interesting cases were then detailed, in which a cure had been effected by these means.

Dr. Clutterbuck feared that the atmosphere thus furnished to the patient would be confined and impure, and therefore unfit for respiration.

Dr. Bird, however, showed that, by the well-known law of the diffusion of gases, the patient would not have to breathe an impure air during the process he had recommended.]

Medical Gazette, Oct. 3, 1845, p. 999.

SURGERY.

AMPUTATIONS, FRACTURES, AND DISLOCATIONS.

82.—ON THE CAPITAL OPERATIONS OF SURGERY, AND THE MEANS OF AVOIDING THEIR DANGERS.

By M. Ballard.

[M. Ballard thinks the mode of performing an operation of little importance to the result, and also that it is little influenced by the regimen of the patient. He has remarked, however, that those who were allowed abundance of food died from the 5th to the 10th day, while those who were bled and kept on spare diet died from the 30th to the 40th day. On the other hand, recovery in the first was rapid, in the latter it was slow and protracted.

From his investigations, M. B. concludes that a medium diet is best adapted to recovery; and says that, by removing those agencies which militate most against recovery, and which are subsequently enumerated, he has performed 28 amputations, 20 being of the inferior extremities, and eleven of these of the thigh, without a single case of death before complete cicatrization of the wound, or until upwards of a year had elapsed after operation.]

The first cause of death in those who have been operated upon is fear of the operation, and dread of the period when it is to take place. This cause affects patients in a manner much more powerful and injurious than might be supposed; under its influence, the pulse, previously quick and full, becomes small, concentrated, and intermittent; colic, nausea, and other phenomena supervene, and these continuing to act upon the patient after the operation, add materially to his dangers.

The first indication to be fulfilled is consequently to allow patients, even those possessing the strongest moral courage, to remain in ignorance, not only of the time of the operation, but also of its necessity.

The second cause of the mortality is pain; it is from the nervous shock which it occasions that those patients die who perish under the knife, or immediately after the operation, and before the development of inflammation. The pulse becomes small, the skin changes its colour, and is covered with a cold clammy perspiration, and if

the capillary circulation cannot be re-established, there will soon arise some fatal congestion of the heart, brain, or lungs. When the first cause has been avoided, it is rare that this exerts so dangerous an influence; but when both are united this unfortunate termination is but too frequent.

The second indication, therefore, is to diminish or destroy sensibility, so as to render tolerable the pain of the operation. This may be readily effected by the exhibition of small doses of some narcotic; *e. g.* one-third to two-thirds of a grain of hydrochlorate of morphine, in divided doses, during the twenty-four hours, for two or three days previous to the operation.

The third and most frequent cause of death is the state to which the name of traumatic or suppurative fever is given, and the corresponding indication will be, not to attempt to combat it, for when once developed it is not within the resources of art either to arrest its progress or avert its consequences, but to prevent its occurrence by guarding against the development of heat and pain, which are the chief elements in that vital action denominated inflammation. We may accomplish this by the employment of bladders containing cold water, which may be removed as often as its temperature rises to that of the surrounding parts.

The fourth cause of mortality is an excessive purulent discharge from the tissues which have been inflamed,—with all its consequent train of evils,—such as burrowing under the integuments, exposure of bones, &c.

If the former indications have been fulfilled, this is not to be apprehended, as no more pus will be secreted than the quantity requisite for the cicatrisation of the wound.

Lastly, as causes of mortality, we may enumerate the pernicious influence attending collections of sick persons together, that of malaria, imperfect ventilation, &c. Dessault often said that he had never seen the operation of trepan save the life of a single patient at the Hôtel-Dieu, and the records of the hospital at Besançon also furnish abundant confirmation of the statement just made. Four capital operations were performed, during the past winter, by a skilful surgeon, upon individuals in the civil wards, and in the midst of patients suffering under diarrhœa and typhus fever. All terminated unfavourably after the 30th day, whilst in the military wards three operations equally severe were followed by a rapid cure.

Medical Gazette, June 20, 1845, *p.* 348.

83—ON AMPUTATION OF THE LEG AND FOOT.

By Dr. Handyside, F.R.S.E.

[Mr. Struthers, of Edinburgh, reports some cases, which have lately occurred in the practice of Dr. Handyside, and which serve well to illustrate the improvements which have lately been made in the treatment of disease of the bones of the tarsus and ankle-joints. They are of use also in assisting to form an estimate of the relative

value of amputation below the knee and at the ankle-joint, besides pointing out an important modification of the latter.

In two of these cases amputation was performed below the middle of the leg, as recommended by Professor Ferguson, thus lessening the danger to the patient, as well as affording a more useful limb. In a third the operation was performed a little above the ankle-joint. This was done because, prior to performing it, the efficacy of leaving a portion of the joint seemed doubtful, though subsequent inspection showed that it might safely have been left, As it was, the danger of the operation performed was much less than of amputation below the knee, which would, by most surgeons, have been considered the only alternative.

Dr. Handyside considers that the comparatively small portion removed and its distance from the trunk, in amputating at the ankle-joint, are quite sufficient to explain its greater comparative safety. He thought it therefore unnecessary to seek further and that we need not resort to Prof. Syme's supposition, of the greater safety of opening the cancellated structure rather than the medullary canal. At the same time he does not deny that such may be the case,though he thinks the proof extremely difficult, and few will be found who would prefer amputation through the condyles of the fremer to amputation below the knee-joint.]

The operation of amputation at the ankle-joint was performed many years ago by various surgeons in France, by the formation of antero-posterior as well as of lateral flaps, but generally in such a manner as not to afford a sufficient covering for the ends of the bones.

The projection of the malleoli formed one of the chief obstacles, but this difficulty was overcome by M. Baudens, who practised and recommends removing them by the saw, and along with them part of the articular surface of the tibia.

A still greater improvement, however, that of making the covering flap from behind, so as to make the soft parts of the heel cover and protect the ends of the bones, seems also to have been first practised in France. This method is described by Dr. T. King, of London. "The operation" says he, "might be performed by making a short flap in front, by a semicircular incision, extending from one malleole to the other. As the internal malleole descends less than the outer one, the joint should be opened on the side ; the astragalus being luxated, the covering flap should be carved out of the soft parts of the heel.

The removal of the malleoles would allow an ample covering for the stump. Lisfranc, in his lectures, mentions a man on whom this amputation had been performed, who could walk ten or twelve miles a-day with great ease.

The merit, however, of introducing this operation into regular practice is more especially due to Professor Syme, of this city. He was, I believe, the first surgeon who performed it in this country, —who showed the importance of the operation, and how it ought, in many cases, to supersede the operation of amputation through the leg.

According to the method practised by Mr. Syme, the soft parts of the heel are included in the posterior flap, and the flaps meet transversely in front of the anterior margin of the lower end of the tibia. The cicatrice, however, is thus necessarily exposed to the pressure of the latter part, and of the bases of the malleoli, and also to the front of the boot or shoe. According to the method described in one case, the ball of the heel is also included, but the flaps are so formed as to meet vertically in front. The cicatrice thus—which afterwards does not exceed from an inch and a half to two inches and a half in length—lies between the soft part of the stump and the soft padding of the boot. By the latter method, also, there is no danger of sloughing of any part of the stump, as the posterior tibial artery is not divided, so as to cut off the principal vascular supply, but only its divisions into the two plantar arteries; whereas, by the other method, the trunk of the former artery may be divided, and thus give rise to the serious consequence of at least partial sloughing of the posterior flap, as happened twice in cases related by Mr Syme, the vessel having been divided accidentally in the one case, and intentionally in the other.

The operation can be much more easily and rapidly performed by the method of antero-lateral flaps, as the dissection of the os calcis from the soft part of the heel is thus much more easily effected,—the great bruising and twisting of the soft parts which occurs in the virus method of disarticulation is thus happily avoided, and primary union is thus more likely to take place. The operation could, if necessary, be still farther facilitated also by incising the pad of the heel backwards from the point where the two antero-lateral incisions meet. This would not interfere much with the subsequent usefulness of the stump.

In the method by antero-lateral flaps, moreover, should union by the first intention not be complete, the matter is allowed to drain off freely from the lavor commissure of the flaps, so as to render quite unnecessary the establishment of an opening through the integument of the heel,—the formation of which is recommended by Mr. Syme, in the method by antero-posterior flaps,—if, indeed, it has not been formed accidentally or unavoidably during the tedious and difficult dissection which is required to separate the os calcis from its attachment.

In removing the malleoli, it is better to employ the saw than the cutting pliers, as, along with these points of bone, a thin slice of the lower end of the tibia ought always, in my opinion, to be removed. When the articular extremity of the tibia is diseased, this evidently must be done,—the surgeon then has no choice; but even when the cartilage of the tibia is sound, as in one case, I would advise its removal, as it will accelerate the healing process, more especially if union by the first intention should fail.

Monthly Journal of Medical Science, Oct., 1845, *p* 785.

84.—AMPUTATION AT THE KNEE.

By Wm. Fergusson, Esq. Professor of Surgery, King's College, London.

[J. R. æt. twenty-four, had for seven years had disease of the left knee-joint. About a year before admission into hospital an abscess formed which burst, and has since continued to discharge matter. He was kept four or five months in hopes of a change for the better, but instead of that he grew worse, so it was resolved to amputate, in accordance with the man's own wishes. This was done as follows,]

The operator, standing on the outside of the limb, placed the heel of a common flap amputating-knife upon the skin on the inner side of the joint, immediately over the condyle, and made a semilunar sweep across the front, extending below the apex of the patella until the point of the blade was opposite the external hamstring, when it was thrust straight across the limb through the popliteal space, and made to appear at the part where the incision in front was commenced; the blade was then carried downwards, so as to form a large flap, from the muscles on the calf of the leg; the skin in front was now drawn above the level of the upper margin of the patella; the quadriceps extensor was next divided; a circular sweep was then made round the bone immediately above the condyles, and the saw was used to complete the separation of the limb. A tourniquet had been applied previous to the operation, and little blood was lost during the incision; a good deal was lost, however, before all the bleeding vessels could be secured, and this seemed principally on account of the difficulty of applying a ligature to the popliteal artery, which, owing to the thickened and hardened condition of the tissues around it, could not be seized and drawn out with the forceps in the ordinary manner. At last, after the application of several ligatures, the bleeding here seemed arrested, and the other smaller vessels were next secured; the large posterior flap was then brought forward, and a few stitches were employed to hold the surfaces and margins together. The wound was lightly covered with lint wetted with cold water, and the house surgeon was desired to bring the edges more accurately together in the course of six or eight hours, when it might be concluded that there would be no more bleeding.

The after treatment was similar to that which has been reported before as the ordinary practice of the same surgeon. Nothing very unusual occurred; the ligatures were discharged at the usual time; the flaps, which were at first thick, hard, and nearly inflexible, from their proximity to the disease, speedily assumed a more healthy condition, and appeared as if they had been cut originally from parts perfectly sound. Union by the first intention took place throughout the greater part of the wound, the open sores were left gradually to close, and although there are still (10th June) several small points of open surface, and the cicatrix is slightly œdematous, the patient moves about, is greatly improved in appearance and health, and has no complaint whatever connected with his former ailments.

In his clinical remarks on this case, Mr. Fergusson stated that he had been induced to select the site of this operation chiefly by the published recommendation of Mr. Syme, of Edinburgh, in its favour. That gentleman had performed it on several occasions, and his reports were so favourable, and the proceeding at the same time offered so many seeming advantages, that he deemed the practice well worthy of imitation.

The operation at the knee-joint, although successful occasionally, had hitherto proved so unsatisfactory, that few surgeons in this country were inclined to perform it; but this proceeding, it would be remarked, was not actually in the joint, for the saw was carried through the condyles of the femur above, though close to the articular surfaces, the patella being removed with the lower part of the limb. Whether the narrower extent of bone thus left would be accompanied with less hazard to the patient than when the condyles were allowed to remain, would have to be proved by the results; but it would at once appear that the end of the femur could be more readily covered in the one case than in the other. Mr. Syme favoured this operation chiefly on the supposition that in consequence of the femur being cut across so close to the epiphysis, there would be less risk of inflammation of the medullary canal, and consequent necrosis of the bone; and as it was well known that this result (necrosis) was more likely to follow an injury of the hard portion of the shaft than of its spongy extremity, there was on this account great inducement to apply the saw thus low down. But there were other good reasons for choosing such an operation, and not the least of these was, that amputation for certain injuries and diseases in the leg, necessitating the section above the knee, might nevertheless be done so low down—so far from the trunk, comparatively, as to lessen the risk on that account as well; for it was a maxim, that the danger of amputations increased as they approached the trunk. Hitherto, when an operation of this kind had been done above the knee, the knife had been so applied as to reserve all the soft parts to form the stump from the thigh alone; but here it would be remarked that the flap for a stump of the thigh had been taken from the leg, where, in such an instance as that which was at present under notice, there was ample material for making a flap of any extent that might have seemed desirable. In accidents, and all diseases of the leg, when amputation in the thigh was requisite, it was not improbable that such a proceeding as this might prove a valuable acquisition to surgery; and even in most of the diseases of the knee-joint necessitating this last resource, it might possibly be proved to be a preferable proceeding to the section higher up. The swelling of a joint, wherein the articular surfaces and ends were in a state of ulceration and caries, had been proved to depend entirely on these diseased conditions, as had been evinced by excisions of such parts, and it was a doctrine of modern surgery, that in removing caries, there was no necessity for reaching beyond the actual seat of the disease. There were many examples of incurable affection of the knee-joint which might possibly be best treated by such a mode as had been followed in this instance.

One objection to the operation was apparent at the time it was done, and that was, the difficulty of securing the popliteal artery. The vessel was so surrounded by effused lymph, and condensed cellular tissue, that he had to slit up the tissues ere he could seize the vessel with the forceps, and even then, it was with no inconsiderable trouble that he could get a ligature placed so as to stop the flow of blood. That had been done, however, after several unsuccessful attempts, and the pupils had all had the opportunity of seeing how completely the swelling of the soft parts had subsided since the removal of the source of irritation. The stump was now an excellent one for its age, and the results in this case had been such as to encourage him to follow a similar proceeding in the next eligible case that might fall under his notice.

Lancet, July 19, 1845, *p.* 79.

85.—MODE OF AMPUTATING THE SUPERIOR MAXILLARY BONE.

By R. O'Shaughnessy, Esq., F.R.C.S.E., &c.

[The following plan of operation is recommended by Mr. O'Shaughnessy, in performing amputation of the upper jaw.]

The patient is to be placed in a strong arm-chair, with his head resting against the breast of an assistant, or on a crutch attached to the back of a chair. A second assistant stands at the patient's side, prepared to make pressure on the carotid artery, should it be necessary to do so in the course of the operation. The operator then takes his place in front of the patient, and should the extent of the disease require the removal of the whole of the malar and maxillary bones, he makes an incision commencing at the zygomatic arch, and terminating in the angle of the mouth. This incision should be first drawn over the zygoma, as far as the malar eminence, then downwards over the surface of the tumour, to within half an inch of the angle of the mouth and into the cavity of the mouth, through the centre of the commissure of the lips, the knife being guided by the fore and middle finger of one hand, placed for the purpose in the mouth. By dissecting this flap upwards, the whole of the attachments of the tumour may be laid bare; by detaching the upper lip, and ala of the nose, the nasal process and hard palate are exposed. The zygomatic process is to be freed from the temporal fascia superiorly, and from the masseter muscle inferiorly at the point to be divided by the nippers. The orbital process is next exposed by raising the conjunctiva of the eye with the inferior oblique muscle. All these incisions and dissections, except the last, should be made with rapidity, as there are no parts of any importance endangered before arriving at the orbit. The cheek is next dissected downwards and backwards for a little way, and then the hard attachments are severed with

the bone nippers in the following order : The zygomatic arch is first to be cut through; the malar bone is next to be separated from its connexion with the external angular process of the os frontis, by cutting backwards into the spheno-maxillary fissure, taking care to guide the forceps with the fore-finger, so as to save the eye from injury. The nasal process must now be cut through by inserting one blade of the nippers into the nostril, and the other into the angle of the orbit, from this the floor of the orbit may be divided by cutting it across with a strong knife to the spheno-maxillary fissure. An incisor tooth or two, if necessary, is next to be extracted, and the palate process as far back as its junction with the palate bone, cut through with the nippers, keeping close to the tumour, in order not to remove more healthy bone in this situation than is absolutely necessary. The whole of the hard attachments being now divided, the tumour is found to be moveable, and in general, slight pressure is found sufficient to displace it ; when the knife is again resumed, and the external pterygoid muscle posteriorly, and the masseter muscle anteriorly, and the mucous membrane at the back of the mouth and cheek cut through, and the tumour removed.

No matter how large the tumour, and how great the consequent distension of the cheek may have been, I recommend most strongly that no portion of the skin of the face, if healthy, be cut away. It almost invariably contracts to very nearly, if not completely, its natural dimensions, and if any of it has been removed with the tumour, no matter how small that portion may be, the want of skin enough is much more likely to be complained of when the cure is completed, than of there being too much if the whole has been left.

[It will be seen that the incision through the integuments employed by Mr. O'Shaughnessy is less extensive than those recommended by Mr. Liston and Mr. Fergusson ; on this point he makes the following observations ·]

Mr. Liston's directions for forming the flap are, to make an incision over the external angular process of the frontal bone, to be carried downwards through the cheek to the corner of the mouth. A second incision is made along and down the zygoma, falling into the other. Then the knife is pushed through the integuments to the nasal process of the maxilla, the cartilage of the ala is detached from the bone, and the lip is cut through in the mesial line.

With great deference to so high an authority on all points of operative surgery, and particularly with reference to this operation, I venture to differ with Mr. Liston as to the necessity of making three incisions through the integuments of the face, at least in the generality of cases, viz., one from the os frontis to the mouth, a second meeting this at right angles over the malar bone, and a third along the side of the nose and through the upper lip. I think the single incision described above, will be found to answer all the purposes proposed. By it the zygoma can be exposed with

ease, a little dissection upwards will lay bare the frontal and malar bones, and with the cheek, the ala of the nose and upper lip may be raised, and the alveolar and nasal processes exposed to the fullest extent. Of course cases occasionally present themselves requiring additional incisions, but I think when they can be avoided, (and I believe in the majority of cases they are not necessary), it will be found of advantage not to make them.

Mr. Lizars and Mr. Fergusson recommend that the saw should be applied to all the bony processes before attempting to cut through them with the nippers ; but this I think quite unnecessary, as with the latter instrument they may be divided with perfect ease and smoothness, and certainly with far greater despatch, and less pain to the patient, than by using the saw, whose action can with great difficulty be confined to the hard parts, and in fact its use is only necessary in the case before pointed out, viz., to divide the malar process where the malar bone may be saved.

In all the cases detailed the tumour was of a large size. In the first, a fibro-cartilaginous tumour of the upper jaw, the mass removed weighed four pounds ; and in the last, a case of osteo-sarcoma of the lower jaw, the tumour was as large as a child's head, necessitating the amputation of all the lower jaw, excepting the left ramus. All the patients did well.

British and Foreign Medical Review, July, 1845, p. 195.

86.—EXCISION OF THE UPPER END OF THE FEMUR IN MORBUS COXARIUS.

By William Fergusson, Esq , Professor of Surgery, in King's College, London.

[A lad of fourteen had suffered fifteen months from hip-disease, and was in the last stage of hectic. The head of the femur was displaced on the dorsum ilii, and could be felt by the finger to have passed into a large sinus. The affected limb was four or five inches shorter than the other, and much bent at the knee and hip. There was no indication of pelvic disease.]

On the 1st of March, 1845, Mr. Fergusson made a longitudinal incision on the hip over the head and neck of the bone, and those parts, with a portion of the shaft, including the trochanters, were removed, the bone being cut across with a common saw. The patient bore the operation well ; the previous bad symptoms soon disappeared, and in two months he was able to move about the wards of the hospital on crutches, the wound being nearly closed.

[This operation was first proposed by Mr. Charles White, of Manchester, in 1770, and first performed by Mr. Anthony White, of the Westminster Hospital, in 1818. The present is the second instance of its successful performance in this country.]

Lancet, July 5, 1845, p. 14.

87—RE-SECTION OF THE FIRST METATARSO-PHALANGEAL ARTICULATION.

By Joseph Pancoast, M.D., Jefferson College, Philadelphia.

[In 1836, Dr. Pancoast removed the entire metatarso-phalangeal joint of the first toe, preserving two thirds of the first, and the whole of the second phalanx. The case was one of caries from a nail run through the joint ; which was much swelled, and had two fistulous openings low down on the sides of the foot.]

I made a semicircular incision, which traversed these openings, and dissected the flap, the base of which was towards the heel, so as to turn it backwards upon the foot. This exposed completely the inner surface of the joint, and about half the length of the metatarsal bone. The joint was next opened, the metatarsal bone isolated from the tendon and the surrounding parts, and divided across near its middle with the metacarpal saw. On the removal of the fragment, the end of the phalanx was found carious : this was pushed out through the wound, and a portion a quarter of an inch long removed with the saw. The interior structure of the adjoining part of the phalanax, which was soft and spongy,was scooped out with the end of the scalpel. The ends of the divided bones were then put in contact, and the flap brought down and secured with adhesive straps and a retaining bandage. Some suppurative discharge continued for three weeks at the posterior angle of the wound ; but it ultimately healed up well. Solid union took place between the divided bones, and the patient preserved his toe, which was found after the cure about three quarters of an inch shorter than the other. The only difficulty encountered in the after treatment, was the tendency of the extensor muscle to elevate the point of the toe. Should I again have occasion to excise this joint, I would prefer to divide this tendon, in case I approximated the bones inasmuch as the necessity for its use would be greatly diminished afterwards ; the middle phalangeal joint, in regard to position and office, supplying the place of the one excised ; and there would be reason to expect that the re-union of the divided tendon would be sufficiently perfect to prevent (in conjunction with the dressing) the flexor muscle from drawing the point downwards. M.Petrequin, reports a similar operation done by Professor Regnoli, of Pisa, in the case of a girl 20 years of age, and which he saw in the progress of cure. By this mode of operation we preserve well the shape of the foot.

[Dr. Forbes adds that he believes Dr. Pancoast to be original in this process, for the introduction of which the profession are greatly obliged to him.]

British and Foreign Medical Review, July, 1845, *p.* 53.

88.—REMARKABLE CASE OF AMPUTATION OF THE ARM.

A baker's boy, a youth of about twenty years of age, was engaged in raising some sacks of corn by a windlass. For the sake of a frolic he seized hold of the chain, wishing to be raised to the upper part of the granary; but he was drawn so high, that his head came against that portion of the roof through which the chain passed. Not being able to hold by the chain, he fell with his arms stretched out. In falling, his left arm came in contact with the top of a door below, which was standing open; and the force was such that the arm, which was bare, was completely separated, at about a hand's breadth, from the shoulder-joint. His body fell on one side of the door, and his arm on the other. Under this extraordinary amputation, the arm appeared as if it had been chopped off by an axe; the bone and muscles were as evenly separated as if they had been divided by a blunt knife, and the end of the bone was not at all splintered, a few nervous filaments only hanging from the wound. The fall of the patient must have been broken by his arm coming thus in contact with the edge of the door; for the only injuries to his person were a few contusions and abrasions about the skin of the face. He was, however, at first speechless and insensible, but he recovered his speech and consciousness in a few days. This wound bled but little; it was dressed, and the brachial artery was tied, to guard against accidental hæmorrhage; the nervous filaments were cut off, but neither the muscles nor the bone required the use of a knife or a saw. Fever with delirium followed. A strict antiphlogistic regimen was adopted, and ice was applied to the head. This treatment was attended with benefit. The wound of the arm, which was at first discoloured, assumed a good appearance; healthy suppuration came on, and the patient, after about two months, was perfectly restored. The stump cicatrized well, and the bone was completely covered with skin.—*Caspar's Wochenschrift*, April, 1845.

Medical Gazette, July 18, 1845, *p. 525.*

89.—REMARKABLE CHANGE IN THE BONES OF STUMPS.

By R. Adams, Esq.

[Mr. Adams lately mentioned to the Pathological Society of Dublin, some most remarkable and interesting facts connected with the pathological anatomy of stumps. Amongst others, the following provision of nature for giving bony firmness to stumps, which does not appear to have been mentioned by any anatomist or physiologist, except in the admirable Museum Anatorium of the Sandiforts.]

Mr. A. has found that when amputation of the forearm is performed whilst the patient is young, and the stump be used, a strong osseous union is formed between the radius and ulna, with

its convexity downwards, by which they are firmly united together. In another case, where the hand had been taken off at the wrist-joint, a similar formation was found. The same condition is figured in the Sandiforts' work, as above mentioned, but theirs are of the tibia and fibula, near the knee-joint.]

Dublin Hospital Gazette, May 1, 1845. *p.* 92.

90.—REMARKS ON FRACTURES OF THE RIBS.

By Bransby B. Cooper, Esq., Surgeon to Guy's Hospital, &c.

The manner in which the accident occurs is of importance in cases of fractured ribs; for if the chest has been jammed, the salient angle will be outwards, and the accident less dangerous, than where the fracture has been produced by a direct blow or fall upon the ribs; for then the salient angle will be inwards, and the prognosis will be more unfavourable, from the chance of the lungs being wounded. For this reason, and from the urgent dyspnœa, the prognosis will be at first unfavourable, but the symptoms may be relieved by bleeding, bandaging, &c. The bleeding diminishes the action of the heart, and the tendency to inflammation; and after its employment the potassio-tartrate of antimony is a very excellent medicine for maintaining the influence produced by the loss of blood. Calomel also, just to affect the mouth, acts as a preventive of inflammation of the serous membranes. The use of the bandage is evidently to diminish the action of the lungs, and keep them as quiet as possible; it does not act as splints to the long bones, which are for the purpose of keeping the fractured extremities in apposition; or, if there be any analogy, it is where a splint is put behind a joint to prevent motion, for the bandage around the chest performs the same office. In diseases of the respiratory organs, the great difficulty in the treatment is to keep the parts quiet; and hence the great danger of disease of the larynx, for which, in my opinion, openings in the trachea are not sufficiently often made for the purpose of maintaining a perfect state of rest of the diseased cartilages of the larynx. During sleep these organs are in a comparative state of rest, and therefore opiates, or rather sedatives, are indicated; the objection to the first being, that they check the natural secretions. Hence bandaging, antimony, opium, calomel, aperients, and complete rest, are the means to be employed in cases of fractured ribs under common circumstances.

Medical Gazette, September 19, 1845, *p.* 885.

91.—*On a New Instrument for the Adjustment of Fractures.* [Mr. Bransby Cooper lately introduced to the notice of his class an instrument, invented by Dr. Jarvis, an American surgeon, for reducing fractures and dislocations.]

This instrument has been modestly denominated "the Adjuster," by its ingenious inventor; a name which correctly enough points out the ultimate effects produced by its application, but conveys

no adequate idea of the enormous power and wonderful simplicity of action which characterises this important invention; and Mr. Cooper gave it as his opinion, in unqualified terms, that the apparatus must necessarily rise into the most general use, although at the same time he seemed to consider it as more applicable in bad cases of fracture than even in dislocations, as these forces as now applied, through the use of the pullies, rarely failed in them, although every day insuperable difficulties in the treatment of complicated fractures occurred in the practice of the most skilful surgeons.

Medical Gazette, May 23, 1845, *p* 131.

92.—ON THE DIAGNOSIS OF FRACTURE OF THE SPINE.

By Bransby B. Cooper, Esq.

[Mr. Cooper, in a lecture on fracture of the spine, lately addressed to his class, makes the following remarks on the diagnosis of the exact vertebra broken.]

With regard to finding out the exact vertebra broken, you are not always able to tell by examining the spine. The method which I always adopt is this: place each hand widely spread out over each side of the chest; you will feel the ribs above the paralysed part move naturally by the intercostal muscles, those below only move according as they are acted on by the descent of the abdominal viscera: in this case the sixth rib appeared to be the last acted on by the intercostal muscles. I confess I think it is a dangerous practice to make extension to attempt to replace the broken vertebra, for you are liable to tear through the spinal chord, and add to the mischief; besides it does not necessarily occur in fracture that the paralysis depends on pressure from bone; it may be from blood, or perhaps serum. With regard to the prognosis in this case it is unfavourable; patients very rarely recover where there is complete paralysis, distended abdomen, suffused countenance, and partial priapism. The danger depends, as to dissolution, and its period, on the proximity of the injury to the brain; you all know that if it is above the fourth or fifth cervical vertebra, that is, above the origin of the phrenic nerve, immediate death is the consequence. I have known a patient having fractured the sixth or seventh cervical vertebra, live six or ten days, breathing solely by the diaphragm.

Now, the first object in the treatment of disease is to prevent symptoms; and secondly to relieve them by the attention to diet, by pharmaceutical means, and, what I wish to draw your attention to, by mechanical means—by surgery. Here, we are sustaining the powers of life by wine and nourishment, and relieving the patient by mechanical means, viz., drawing off his urine and washing out his bladder. The catheter, in these cases, should always be introduced with the utmost delicacy, for as the patient cannot

feel so as to tell you when you are going wrong, you may do much mischief. The principal cause of death, in these cases, is owing to the decomposition of the urine (for the vital functions are not much interfered with); the urine decomposes, causing inflammation of the bladder, which secretes a large quantity of unhealthy mucus, and that also decomposes, increasing the irritation. I do not, however, think we are right in saying that the vital functions are not much interfered with, for look what a large secreting surface—the skin—is deprived of its function; and the effect this has upon the constitution is well known. In the case of burns, if more than one-fifth of the body is deprived of cuticle, the result is fatal; and we do not know what effect the stoppage of secretion from so large a surface may produce on that of the lungs and kidneys, and thus hasten the fatal termination.

Medical Gazette, June 13, 1845, *p.* 263.

93—*New Fracture of the Humerus.*—Dr. Houston laid before the Pathological Society of Dublin, some examples of a peculiar lesion of bone, which, he stated, had never been appreciated in its true light by the profession until demonstrated at that society by Mr. Smith; he meant that lesion of the anatomical neck of the humerus to which the term impacted fracture may properly be applied. He had three specimens for exhibition. The great interest attached to the observation of this accident was the establishment of an analogy between it and a similar one, which also had been first noticed in that city by Dr. Colles, in connection with the femur, and called impacted fracture of the neck of the femur. Sir Astley Cooper, in a paper in the Guy's Hospital Reports, on fractures of the neck of the humerus, had described and even delineated this accident, but without taking any notice of the remarkable impaction to which the bones were subjected. An important practical observation made by Dr. Houston was, that in all his cases there had been complete and firm re-union of the fragments, by bone, and that too, with only a trifling degree of deformity. With regard to the diagnosis of this injury, Sir A. Cooper, in the memoir above alluded to, says that the lower fragment gets forward, so as to admit of being pressed and felt under the pectoral muscle, and lays this down as one of the most characteristic symptoms of the injury. Dr. Houston shewed that, in his cases, and also in the drawings published by Sir A. Cooper and Mr. Smith, in which the fracture ran through the anatomical neck of the humerus, close to the articulating surfaces, the displacement of the lower fragment was more outwards than inwards, the impaction being of such a nature that the inner edge of the shaft was driven into the centre of the spongy part of the head; or, in other words, that the detached head was twisted half round, so as to be placed somewhat on the inside of the shaft; a position which the bones had manifestly taken and maintained from the first moment of the accident, and which rendered it physically impossi-

ble that the lower fragment could ever have been felt in the position which it has been said by Sir A. Cooper to assume, under the pectoral muscle. In all the cases of the kind of fracture known to Dr. H., the angle formed at the point of the lesion was salient outwards, viz. at the great tuberosity; and this was shown by him to contrast strongly with the deformity in a specimen in which the fracture had occurred in the surgical neck of the humerus, or close below the tuberosities, as here the lower fragment projected to the inside of, and beyond, the upper, in such a manner that it might have admitted readily of being pushed, when recent, in the direction of the axilla and pectoral muscles, and of being felt there.

Medical Gazette, May 2, 1845, p. 38

94.—*On the Reduction of Dislocations by the Power of Twisted Rope.* By D. Gilbert, M.D., Professor of Surgery, Philadelphia.—Every practitioner knows that the reduction of luxations of the large joints cannot easily be accomplished without the steady, equable, and continued traction furnished by the careful and patient use of the pulleys. These mechanical appliances often cannot be obtained when needed, in the treatment of such accidents; and the power resorted to then, is that which may be furnished by awkward and unskilful assistants. Under such circumstances, the efforts at reduction are protracted, unsteady, and, in most instances, unsuccessful; great force is applied by sudden starts and irregular jerks, which with bleeding, warm baths and sedative medicines, exhaust the vital energies of the patient, probably without reducing the luxation; and cases are not wanting in which serious additional injury has been inflicted upon the parts concerned, by such procedures.

The power furnished by *twisted rope* answers every indication, requiring extensive power, as perfectly as the pulleys, and is indeed preferable on account of its simplicity and availability in every possible situation, enabling the surgeon even to dispense with assistance, should that be necessary. The credit of first using this power in such cases, is due to my friend P. Fahnestock, M D., of Pittsburgh, Pa. He was led to its trial by necessity, and the result was so satisfactory that he has resorted to it in every case which he has met with since.

The mode of application is as follows:—place the patient and adjust the extending and counter-extending bands as for the pulleys; then procure an ordinary "bed cord" or "wash line," tie the ends together, and again double it upon itself; then pass it through the extending tapes or towel, doubling the whole once more, and fasten the distal end, consisting of four loops of rope, to a window sill, door sill, or staple, so that the ropes are drawn moderately tight; finally, pass a stick through the centre of the double rope, dividing the strands equally by it; then, by revolving the stick as an axis or double lever, the power is produced, precisely as it should be in such cases, viz:—slowly, steadily, and continously, which, with the aid furnished by the surgeon to the immediate seat of lesion, and to the system in general, cannot fail to conduct the case to a happy issue.

American Journal of Medical Science, April 1845, p 354.

95.—*Extender for Reducing Dislocations.* By Mr. G. N. Epps, University College, London. [Mr. Epps has invented an instrument for producing steady and continued pressure for the reduction of dislocations.]

This instrument will enable the surgeon to gain the following advantages:—

1st. A steadily continued and gradually increased extension. The steadily continued extension is realized by the extending power being carried on by turning the handle, and thereby drawing in, with mechanical precision, the bar, by which the extension is made. The power can be regulated to the eighth of an inch, the rack preventing the bar from returning. (I had proposed the usual rack applied to cog-wheels, and am indebted to Mr. Coxeter, instrument-maker to University College Hospital, for the present more convenient contrivance.)

2nd. The muscular power necessary to be exercised by the operator, is next almost to nothing; any one can by means of this instrument, pull with ease three powerful men. The surgeon has thus not to exhaust his power, and appears as a surgeon, and not as a mere mechanic toiling.

3rd. He can, in addition, by means of the rack, fix the extender at the point he chooses, and then, without any difficulty, can perform the other part of his duty,—namely, the coaptation of the limb to the joint from which it was dislocated; in fact, the extension can be made with one hand, the coaptation with the other.

4th. This instrument does not require any distance from the patient in order to gain the resistance—the bed post would do.

Lancet, July 26, 1845, *p.* 110.

ORGANS OF CIRCULATION.

96.—ON THE DIAGNOSIS OF DEEP-SEATED ANEURISM.

By M. Gendrin.

[The Revue Medicale for December 1844, contains an important paper on the diagnosis of deep-seated aneurismal tumors, the following analysis of which we take from the Lancet.]

The symptoms by which aneurisms may be recognised are to be sought for in the rational appreciation of the modifications which their presence necessarily produces in the phenomena of the circulation They may be examined in *visible aneurisms*, or aneurisms which have made already their appearance externally; in *latent aneurisms*, or aneurisms which have not manifested their presence externally; and, lastly, they may be studied separately, in each of the large arteries of the body.

In visible aneurisms, the tumor is always situated on the course of an artery; it is spherical, or ovidal; sometimes, but rarely,

fusiform. The patient suffers continued pain, with pulsations isochronous to the arterial diastoles. The skin is in a normal state, except when about to give way under the influence of the pressure. On examining by the touch, pressure is found to be painful. The tumor is elastic, and may sometimes be depressed completely, sometimes only partially. It is the seat of pulsations isochronous with the arterial pulsations, and of a movement of expansion more or less marked, which is sometimes accompanied by a sensation of tremor, the sibillous and sonorous vibrations of which may be perceived under the fingers. To these the symptoms given by most authors, M. Gendrin adds the following :—Each impulsion, isochronous to the arterial diastole, is followed by a retraction of the tumor, easily appreciated by the hand, which retraction is accompanied by a tremor (fremissement) quite distinct from that which corresponds to the diastolic shock. In aneurisms of the large arteries, the retraction is nearly always followed and terminated by a second impulsive shock, which corresponds exactly to the systole of the artery. It consequently follows, that on these tumors two alternate shocks may be distinctly appreciated, the first of which corresponds to the diastole of the artery, and the second takes place between it and the following diastole. These double pulsations always exist in aneurisms of the large arterial trunks, and are pathognomonic. They suffice to enable us to distinguish aneurisms from tumors which receive the impulsive motion from voluminous adjacent arteries. The latter only present one impulsion isochronous with the arterial diastole.—If pressure can be exercised on the artery between the heart and the tumour the pulsations are arrested in the aneurism. Pressure exercised on the artery below the aneurism does not arrest the pulsations, but it modifies them. If they are single, they persist, but become short, and communicate to the hand a more sudden shock, but are followed by appreciable retraction. If they are double, the second *disappears* completely. These modifications are best studied on the decending aorta, the abdominal aorta being compressed.

On applying the stethoscope to an aneurismal tumour, a percussion sound, isochronous with the arterial diastole, is heard, accompanied by a well-marked impulsion. This impulsion is followed by the progressive retraction of the tumour, which ends by a second percussion sound, the intensity of which is the greater, the larger the calibre of the diseased artery. This second impulsion sound is always present in aneurism of the large arteries, and is even accompanied by an evident impulsion, It is slight and without impulsion, in aneurism of middle sized arteries, and absent in those of a third order. The first percussion sound is often followed by a blowing, dry, rugous, friction sound, sometimes tremulous and dull, sometimes sibilant. This friction sound lasts during the entire period of retraction of the tumour, progressively diminishing in intensity. When there is a second percussion sound, the latter terminates it. In large aneurismal tumours, the friction sound is sometimes absent, or so short and feeble as to be perceived

with difficulty, and only after increasing the energy of the circulation by muscular efforts on the part of the patient. It is not very rare to find this friction sound presenting a double character in large aneurismal tumors of the aorta. It then constitutes a kind of go and come sound, occurring between the two percussion sounds. On applying the stethoscope above and below an aneurismal tumour, along the course of the artery, we often hear a friction sound isochronous with the arterial diastole. This sound is evidently the result of the lesions that exist in the tumour, as it diminishes and disappears as we recede from the tumour. When it is caused by arterial induration, on the contrary, it persists, and is often most decided at a distance from the tumour. If the pressure exercised on the arteries above an aneurismal tumour is not carried far enough to interrupt the passage of the blood, it will increase or even create the friction sound isochronous with the arterial diastole, but diminishes or even interrupts the percussion and impulsion sound. All these phenomena are the necessary results of the circulation of the blood in the diseased cavities, and admit of easy interpretation.

1st. Each time that the column of blood, expelled by the impulsion of the heart, distends the arterial parietes, the blood driven into the cavity of the aneurism exhausts its impulsive force on the parietes of the sac. Thus originates the impulsive percussion isochronous with the arterial diastole, which gives rise to the expansion perceived by the hand on the tumour, and to the first percussion sound.

2nd. The aneurismal sac, distended by the blood driven into its cavity, contracts progressively on itself, in the interval of the arterial diastole, and thus the retraction of the tumour is produced which follows the first impulsion and percussion sound.

3rd. The intensity and the extent of the expansive pulsation of the aneurism and of the retraction which follows are modified by the size of the cavity of the sac, and by the volume of the fibrinous stratified clots which it contains. Thus, indeed, is explained the great difference which exists in various aneurismal tumours, or in the same tumours at different epochs, with reference to the extent and form of the impulsion, &c.

4th. The margin of the orifice of the aneurism in the artery being often rugous, and presenting protruding filaments, or free fibrinous lamellæ, sonorous vibrations are produced by the friction of the column of blood which penetrates into the aneurismal sac at each arterial diastole. It is these sonorous vibrations which produce the dry, rugous, friction sound, and the tremulous shaking of the tumour isochronous to its pulsations. When the tumour retracts on its contents, the same physical phenomena accompany the return of the surplus of the blood into the arterial canal, and thus is produced the prolongation of the friction sound, and sometimes of the tremulous motion which is perceived during the retraction of the tumour.

5th. The systole of the heart propelling the blood into the arteries causes their diastole, as well as that of the aneurismal sac. The parietes of the sac retract on themselves slowly, owing to the destruction of the middle arterial membrane, to the presence of the stratified clots, and to the fact of the blood having to return into the artery by a small orifice. The parietes of the artery above and below, on the contrary, being healthy, contract on the blood which these contain, as soon as the diastolic impulsion of the heart is exhausted. Consequently, as there is not exact synchronism between the retraction of the tumour and that of the arteries, the arterial reaction suddenly arrests the aneurismal retraction. If the arterial reaction is powerful, as is the case with large arteries, it drives back a certain portion of the blood into the aneurismal sac. Thus, a second shock is produced, which, although weaker than the first, is, nevertheless, very evident. This second shock is the most marked in aneurisms of the aorta and its first subdivisions, from the middle tunic, above and below the tumour, becoming hypertrophied. It is easy to understand that this second shock may be accompanied by a friction sound.

Latent Aneurism.—The presence of all the above symptoms is not necessary to enable us to recognize a visible aneurism, but a knowledge of their existence is of the greatest value in the diagnosis of latent aneurism. In the latter, the tact is sometimes useful, as when a thoracic aneurism is in contact with the parietes of the thorax, and in abdominal aneurism, in which the parietes of the abdomen may generally be so depressed as to allow of the tumour being felt. All deep-seated aneurismal tumours are perfectly immoveable. The pulsation of a deep-seated thoracic aneurism, when perceptible to the hand, is double; the first corresponds to the arterial diastole, the second to the arterial systole. In thoracic aneurism, when the tumour has displaced the lungs, there may be absence of sound on percussion. There may also be a vibratile friction sensation, but as this sensation may be produced by an indurated artery, it is not pathognomonic. Auscultation furnishes the most important signs. The principal one is the percussion sound. It is isochronous with the arterial diastole, is single in mere arterial dilatations, always double in aneurism of the large splanchnic arteries, with perforation of the internal and middle tunics. It is very similar to the double percussion sound of the heart, from which it is difficult to distinguish it in the thorax. In order to arrive at a correct diagnosis, the seat of its great intensity must be carefully ascertained. If that greatest intensity is not where the sounds of the heart are heard with their summum of intensity—that is from the synchrondro-sternal articulation of the fourth rib, to that of the second,—the double sound is, probably, owing to aneurism. The double percussion sound of the aneurism is not, either, synchronous with the normal sounds of the heart. The first percussion sound is heard after the systole which it continues, and the second always precedes the

diastole, so that sometimes four percussion sounds are heard, joined two by two, the second and fourth being, as it were, the echo of the first and third.

The percussion sounds of an aneurism, whether single or double are often accompanied by dry, rugous blowing, or sibilant friction sounds, the cause of which we have already explained. Their presence renders the diagnosis less difficult; they are easy to distinguish from friction sounds developed in an indurated artery; the latter run along the artery, whereas the former are confined to the vicinity of the aneurism, and accompanied by a percussion sound. When an indurated artery is also the seat of an aneurism, the friction sound, rugous along the artery, becomes sibilant at the aneurism. The friction sound may present itself under the form of a go and come sound, in which case it is always circumscribed between the two percussion sounds. It represents the motion of the blood penetrating into the aneurism, and then leaving it again. All these symptoms may sometimes be perceived on the posterior region of the body, as well as on the anterior.

The pain experienced by the patient is constant, but subject to exacerbations. It is owing to the inflammation which exists in the parietes of the sac, and which extends by contiguity to the neighbouring parts. Deep-seated inflammation existing along the course of the larger vessels is accompanied by the same kind of pain, so that, in order to establish the diagnosis, it is necessary to take into consideration the presence or absence of the percussion and friction sounds of aneurism.

Aneurism of the larger arteries is nearly always accompanied by palpitation and dyspnœa. The existence of these symptoms does not indicate the presence of organic disease of the heart. They may be merely sympathetic phenomena. As, however, hypertrophy of the heart and chronic endocarditis, with or without valvular disease, is by no means uncommon in aneurism, the sounds of the heart and the precordial region must be carefully examined.

Varicose dilatation of the veins sometimes supervenes, owing to the pressure of a deep-seated aneurism on the large venous canals. As, however, the same symptom may be produced by the pressure of any other tumour, the diagnosis can only be established by the other symptoms which we have enumerated.

Lancet, May 17, 1845, *p.* 548.

97.—SPONTANEOUS CURE OF TUBULAR ANEURISM.

By J. Luke, Esq., Surgeon to the London Hospital, &c.

[The patient was a stout, healthy man, of temperate habits. About a year before his admission into hospital, a tumour appeared on the upper part of the right thigh, which extended from Poupart's ligament, three or four inches down the course of the femoral artery. Pulsation was strong and uniform over the whole surface. The

tumour was compressed with ease, and emptied, but refilled on the withdrawal of pressure. There was no pain, nor bruit, but weakness of the limb of the affected side, which was however equal in temperature to the sound limb, and the arteries low down pulsated with equal strength on both sides,

It had not increased in size from its first appearance, and for six months produced no uneasiness. Cramp and pain in the groin were then brought on by running, and are since easily induced by slight exercise.]

With a conviction on the mind that the tumor was aneurismal in its character, it was thought improper to place implicit credence in the patient's statement, that it had not increased in size since its first discovery. He was therefore placed in bed, with the intention of determining by personal observation whether or not it underwent any increase in its dimensions; the determining of this point being necessary to guide the opinion and the advice as to the course best to be pursued in his case. It was thought that the application of a piece of adhesive plaster spread on leather, and of a spica bandage over it, was quite compatible with these intentions. They were accordingly applied over the tumor March 3rd, and not again disturbuntil the 8th. On their removal on this day, it was found that a considerable change had been effected in the tumor. Instead of being soft and compressible, and capable of being emptied of its contents, it was hard and unyielding, and slightly painful on pressure. It was further observed that its pulsation had entirely ceased, as well as the pulsation of all the arterial trunks of the limb; the femoral, popliteal, and anterior and posterior tibial arteries, having in turn been examined. The foot and leg felt colder to the hand than the opposite, although the thermometer did not indicate any actual diminution of temperature. While collecting information respecting a state of things so unexpected, the patient stated that when the plaster and bandage were first applied he experienced considerable pain in the tumor for about half an hour, attended by an unusually violent throbbing, which perceptibly raised the bandage. At the end of that time the throbbing ceased. and there had not been any return. The plaster and bandage were reapplied, and the limb was wrapped in wool.

On the 22nd of March the tumor was still hard, consolidated, and without any pulsation. There was apparently an obliteration of its cavity, the contents of which had undergone some diminution from absorption. Mercurial ointment spread on lint was applied, and the patient allowed to move out of bed.

April 2nd.—He has walked about, and, he states, with greater ease and freedom than when admitted; but the pain in the calf remained.

19th.—Has left the hospital for about ten days, but, as requested, paid the hospital a visit to day. He still complained of pain in the calf, especially when going up stairs. There was also numbness of the foot at times. The circulation was apparently restored suffici-

ently for the proper nourishment of the limb, yet pulsation had not returned in any of the arterial trunks. The size of the tumor had undergone very considerable diminution, and the aneurism had been without doubt cured.

[Mr Luke then notices the indefinite nature of the terms true, false, and diffused, as applied to aneurisms, and thinks they may with advantage be allowed to become obsolete, as others more distinctive may easily be substituted.]

Thus the different kinds of aneurism may conveniently be thus designated:—1st, To the most common kind, characterised by the existence of a sac, the term "saccated" may with propriety be applied as simply indicative of that fact, without entering into any speculations as to the means by which the sac is produced. If we wish to make distinctions of the saccated form, we might use the term "traumatic" for those forms of it which are the result of wound. 2dly, There is a form of aneurism characterised by a pretty nearly uniform dilatation of the tube of the artery, of which the case above related forms an example. This, by some surgeons, has been considered not to be aneurism at all; while by others it has been regarded as the true form of that disease. From the circumstances of the tube of the artery undergoing a pretty uniform dilatation, I think that the term "tubular" would not be inappropriate, and would express adequately the kind of disease meant to be designated. 3dly and 4thly, The terms "dissecting aneurism" and "varicose aneurism" are sufficiently expressive of the forms of disease to which they are at present applied, and need no further observation. But 5thly, the term "aneurism by anastomosis," as it involves an hypothesis, may be advantageously changed for "capillary aneurism," as merely conveying an idea that the minute or capillary vessels are the structures affected. Thus we have—

1. Saccated aneurism, including traumatic,
2. Tubular aneurism,
3. Dissecting aneurism,
4. Varicose aneurism,
5. Capillary aneurism;

under which terms may be embraced every known variety.

With regard to the case above related, the first circumstance which calls for comment is the external form of the tumor. In this respect it is generally by no means so globular as the saccated disease, but is usually oval, or rather fusiform, with the long axis lying in the course of the arterial trunk. The external form results from the manner in which the disease is developed, which, in cases similar to the above, is by a limited but pretty uniform expansion of the arterial tunics, with a corresponding enlargement of the area of the vessel at its dilated part. The extent of the vessel so dilated varies, but above and below the diseased part the artery retains its healthy dimensions. From this state of things arise some important considerations.

It will be recollected, that in saccated aneurism the blood is thrown out of the course of the circulation into the sac, where, probably,

the influence of the current is so far diminished in certain cases as to allow the contents to become partially quiescent, and thereby disposed to coagulate. In the tubular form, however, the whole force of the current passes through the centre of the dilated part, and must obviously tend to counteract any disposition to coagulation of the blood contained therein. It is to this cause that the absence of solid contents has been usually attributed, as well as the greater softness of the tumor, and its capability of being entirely emptied by pressure. We might also be disposed to think that in this circumstance we see a cause tending to counteract any disposition which might exist towards a cure.

Another circumstance worthy of observation is the usually very low rate of increase of the tumor in such cases. This is in accordance with what should be expected when the resistance of the arterial tunics and the force of the current of blood are nearly equal in amount; and we might infer that they are so in this form of disease by simply witnessing the fact of this slow increase. But it might be supposed that as the tunics become thinner by expansion, their resistance would become less able effectively to oppose the force of the current of blood, and that consequently they would yield proportionably more rapidly as the tumor became larger. I believe the reverse to be the fact, arising from the force of the circulation upon the interior of the expanded part being diminished in a greater ratio than the resistance of the vessel, from well-known causes which in hydraulics influence the force of currents passing from small tubes into those of larger dimensions. It is not difficult to imagine that, in the progress of tubular aneurism, a status may at last be arrived at, in which no further increase of the tumor would take place; simply from the influence of the dilatation upon the force of the current at the part. Nor am I satisfied that, in the above case, such a status had not been attained; for it was remarked by the patient that he had not observed any increase of the swelling during the twelve months which he had cognizance of its existence.

The last and most important consideration is that relating to the means by which the cure in the above case was effected. It must be evident, however, that little positive information can be gained upon this subject, and we must consequently be content with mere surmise, or form our opinion from general considerations. It is the common practice in such cures, and in those which take place in the saccated form of disease, to attribute them to the occurence of coagulation of the blood within the artery or within the sac, which, by occlusion of the vessel or sac, prevents the ingress of fresh blood, and consequent increase of the disease. I am disposed to think that such explanation is unsatisfactory, both in reference to the case related and to aneurisms generally, when they undergo spontaneous cure.

The question is one of some moment, and perhaps may merit a few observations, particularly as it has a practical bearing. It is well known that, in examining the sac of an aneurism, it is not unusual to find both fluid and solid contents, the first being blood,

the last being generally supposed to be blood in a coagulated state, but changed in its character. By attending to the last, it will be found (as pointed out by Mr. Wardrop in the Cyclopædia of Surgery), that it consists of two portions; the one coloured, the other nearly colourless. The coloured portion being undoubted coagulum, retains the common characteristics of that substance, and usually, but not always, occupies the central part of the sac. It is to the colourless, or what I have *called* the colourless portion, that I wish to direct attention, because it is on this that the curative process mainly depends. This portion mostly adheres to the interior of the sac, but the adhesions are easily separable; so that it is sometimes found partially or wholly separated, probably by causes exterior to the sac. It is formed in layers, and the laminated arrangement is easily seen when a section is made. These layers are sometimes but loosely connected with each other, and being imposed on each other, are necessarily concentric. The common explanation given of their formation is, that they are produced by successive deposit, from the blood flowing through the sac: thus Mr. Hodgson, in speaking of the spontaneous cure, says, "*the cavity of the sac* is gradually filled with layers of coagulum." Mr. Wardrop, however, has adduced some reasons for supposing that these layers are the result, not of coagulation, but of an action taking place in the parietes of the sac. The reasons which he adduces may perhaps fail of carrying conviction to the mind (a fate which may also attend the additional reasons which I shall presently adduce), yet they are sufficiently cogent to deserve serious consideration. Those which he principally relies on, are the "great difference in the anatomical characters of a common clot of blood and a fibrinous concretion;" "the concreted fibrine having its interior surface smooth and polished;" and the "vascular connection," which he has every reason to believe exists between the fibrinous concretion and the sac. The additional reasons, which have convinced me that the common explanation of these formations is incorrect, are derived from the examination of the fibrinous layers themselves, and the occasional interposition of *coloured* coagulum between them, or between them and the sac. It is not in every case that these interpositions are found; but when found, their relations to the colourless laminæ are most important, if not conclusive evidences for the elucidation of this subject.

If we adopt the common supposition that the whole solid contents of a sac are mere deposits from, or coagulations of, the the blood, the explanation of the arrangements in the production of the colourless laminæ with respect to these coloured masses is almost unintelligible; for we cannot explain how it happens that, if the whole mass be the result of one process of formation, part of it, which lies close together, or are inclosed the one within the other, acquire different characters, such as these coloured and colourless contents possess. Under a real similarity in the process of formation, it seems most highly probable that they would present also a similarity of appearances, and that they would be either entirely

coloured, or entirely colourless, but not with the coloured and uncoloured parts intermixed, as we sometimes find them.

I think, therefore, we must discard the opinion that the solid contents of an aneurism are the result of one process only of coagulation, as failing to afford a satisfactory explanation of the phenomena. All difficulty, however, vanishes, if we assume two separate processes. There can be little doubt that the coloured contents are coagula of blood, as they retain appearances sufficiently characteristic for their recognition as such. It is in looking to the position which these occupy with respect to the uncoloured or fibrinous concretions by which they are surrounded, that we are led to a satisfactory explanation of the manner in which the latter are produced. When we look at these clots, we find them either entirely surrounded by colourless fibrinous concretion, and excluded thereby from the fluid blood passing through the sac, or lying between the fibrinous concretion and the sac itself,—in which latter situation they may or may not be excluded from contact with the fluid blood. When in the former of the two positions, we cannot account for their insulated situation, unless by supposing the clot to have been formed upon the surface of a fibrinous mass, and becoming subsequently inclosed by new deposits of fibrine, gradually augmented until the clot becomes central with regard to the whole mass. But in the latter situation blood may be insinuated between the fibrinous concretion and the sac, when, as before mentioned, they become separated by an accidental cause, in which case blood so insinuated will coagulate, and retain its characteristics.

Having determined these points, we have next to discover on which surface of the fibrinous concretion these minute clots are really formed. If it be on the interior, or that surface which is in contact with the circulating blood of the sac, it is then no doubt derived from that blood; and the fibrinous concretions, by which it eventually becomes inclosed, are equally derived from the same source. On the contrary, if it be on the exterior, or that surface in contact with the sac, the fibrinous concretions which subsequently inclose it are, with equal certainty, derived from the sac; since by the formation of new adhesions after the clot has formed, the circulating blood becomes excluded, and no other source remains than the sac, from which any accretion of new matter can be derived.

I am disinclined to the former supposition, from my belief that had the clot been so formed, the subsequent deposits, by which it becomes inclosed, would be of the same character and colour as the clot itself; and a wholly different appearance from that which we actually find would result therefrom. On the other hand, I adopt the latter supposition, not only as more in accordance with our general ideas of the reparative process, but also, and more particularly, from the observations I have had an opportunity of making upon the aneurismal contents. Thus a small coloured clot had formed between the sac of an aneurism and the fibrinous con-

cretion contained within it, arising, I believe, from the passage of blood into a space left by a slight separation of the two from each other. The further ingress of blood had been prevented by new adhesions, and the process of inclosure had commenced by the deposit of a thin layer of fibrinous matter upon its exterior surface, which matter adhered to the sac, and had no doubt been formed subsequently to the coloured clot. A similar inclosure had occurred to another clot in the same aneurism, but which, by the deposit of a greater number of fibrinous layers, had become more deeply buried within the fibrinous mass, and consequently more centrally with respect to the aneurismal tumour.

Taking the order of sequence of the deposits to be as I have stated, it follows that the blood, not having access to the exterior fibrinous layers, by reason of their adhesions to the sac, any increase which accrued to them could not have been derived from the blood, but must of necessity have been derived from the sac itself, with which alone they were immediately connected. Granting this mode of formation of the exterior layers, a proof of a strongly presumptive kind is established, that the whole of the fibrinous layers were formed in a similar manner, and that the whole were the result of successive formations, each pushing its predecessor forward upon the cavity of the sac, and being itself in turn pushed forward by its successor, and enclosing a portion of coloured coagulum which had fortuitously become congealed upon the surface.

This may perhaps be sufficient to shew the general tendency of this argument to prove the sac itself, or more properly its vessels, to be the efficient agents in these fibrinous formations, although much else may be adduced both from examinations of the aneurismal contents, and the analogies of other diseases.

The space I have already occupied must be my excuse for not proceeding further upon this point. It must be evident, however, that if the fibrinous concretion be derived from the sac, and not from the blood, the order of increase must be different from that which is generally supposed. Instead of growing by deposits on its inner or central surface, the increase must take place from the exterior surface, which lies in contact with the sac. The action itself by which the vessels deposit the fibrinous accretion is probably of the plastic kind, and bears a certain analogy to the adhesive processes in other parts. Such being the probable means by which nature attempts to cure in these diseases, we are furnished, by the knowledge of them, so to conduct our treatment as at least not to counteract her efforts. We may thus assign a reasonable ground for objecting to a practice which experience has already shewn to be injurious, and can view the abstraction of blood not as a means of promoting coagulation of the blood, but as a means merely of diminishing the force of the circulation, and its consequent disturbing influence upon the sanitory plastic actions of the vessels of the sac. We therefore learn to avoid the enormous abstractions of blood formerly, and even sometimes at present, so injuriously used,

from a conviction that, although they diminish the disturbing influence of a perhaps too powerful circulation, they also to the same, if not to a far greater extent, diminish the reparative action of the vessels of the sac, from which alone any permanent benefit can reasonably be expected. Neither shall we have the same dread as formerly of the slight inflammations which occasionally arise in the sac, since by such inflammations the curative action is likely to be promoted. Thus, while we learn to direct our endeavours to diminish the disturbing influence arising from the force of the circulation, we at the same time learn to avoid weakening the powers of the system by the use of means which induce extreme inanition.

Medical Gazette, Aug. 29, 1845, *p.* 78.

98.—GENERAL PRINCIPLES OF TREATMENT OF AORTIC ANEURISM.

By Norman Chevers, Esq, M. D., &c.

The following appear to be the chief general indications which it is necessary to fulfil in conducting a rational plan of medical treatment in cases of aneurism of the aorta.

To encourage, as much as possible, the deposition of thin layers of plastic coagula within the aneurismal sacs.

To render the circulation through the visceral arteries, general capillary system, principal venous trunks, and lungs, as free as possible.

To diminish, as far as practicable, the volume of the circulating fluids, but in such a manner as to reduce the proportion of their watery constituents without impoverishing the fibrine, or producing debility in the system.

To maintain the muscular power of the heart.

[Valsalva's plan of treatment was calculated to prove eminently beneficial under the direction of able surgeons, and even to obtain a cure; but when practised by the incautious and unscientific, instead of tranquillizing the system, &c. it had the directly opposite effect, "impoverishing the blood, rendering the heart weak and irritable, and exchanging the probability of a sudden death for the certainty of a painful and lingering one."]

The only natural process by which the cure of aneurisms of the aorta can be effected is, of course, by procuring obliteration of the sacs by firm layers of adherent coagulum. In aneurisms of the limbs it appears to be merely sufficient that the sac should become completely plugged with clots; it matters little of what form, providing only that they be firm enough entirely to prevent the flow of blood through the diseased part, and to divert its course to the collateral artesies; but in aneurisms of the aorta, or, at all events, of its upper portion, a far more delicate process requires to be effected, as here the sudden formation of loose coagula in an aneurismal sac will always be liable to occasion rupture of the walls of

that cavity, for when the pouch has already become filled to distension—the passing current of blood still maintaining its pressure upon the mouth of the sac—every additional drop of fluid added to its contents will begin to act upon its walls with the distending force of the water in a Bramah's press. Such loose coagulation will also be liable to stop the flow of blood through the aorta (an occurrence which, it is needless to say, is all but certainly fatal, whether suddenly or gradually produced), or, at all events, it can scarcely fail to cause fatal obstruction and embarrassment to the heart's action, as coagulation of this kind would never be limited merely to the interior of the sac. The trial should be, by tranquillizing the circulation and preserving the blood in as highly fibrinized a state as possible, to procure the obliteration of the sac, and of the sac only, by layers of coagulum so firm, organized, and even, that they may resist the infiltration of the blood, and present internally a smooth but resisting surface past which that fluid may glide easily in its passage through the vessel. It is a fact worthy of observation, that while, in one individual, the fibrine of an aneurismal sac is found disposed in thin, expanded, firm, and closely-united laminæ of a light flesh colour, and supplied with numerous and beautifully regular corresponding ramifications, in another subject, where the disease has occurred nearly in the same position, the clots appear thick, irregular, interrupted, and broken, their interstices infiltrated with fluid blood, and their layers coarse and friable, and scarcely presenting the slightest traces of organization. It is impossible not to perceive that this difference has arisen from the process which tends to a spontaneous cure of the disease having been more imperfect in the latter than in the former case.

[The importance of removing all congestion of the liver, spleen, and kidneys, and keeping up a healthy action cannot be too strongly enforced.]

The reduction of the volume of the circulating fluids has long been considered as a necessary means in the treatment of all organic diseases of the heart and its appendages; but, unfortunately, depletion has too often been the course adopted to effect this purpose. In a person reduced by organic disease, a full bleeding, to say nothing of its influence in depressing and rendering irritable the functions of the nervous and vascular systems, has the effect of removing from the body a quantity of vitalized and organic matter which, it is probable, the weakened powers of nutrition may never succeed in reproducing; and, so far from this plan of treatment having the effect of relieving the blood-vessels from distension, I doubt much, whether, in a weakly person, whose absorbents are active, the vascular system does not, in a few hours after a free depletion, either by the lancet, or by purging, contain as large, nay, it may be even by a larger, bulk of fluid than it previously did, much watery matter having been rapidly absorbed to supply the place of that which was removed. Still, in these cases, as much as possible of

the thinner part of the blood must be drained off. In every instance of arterial and cardiac disease the weakened structures become oppressed with the load of fluid which they have to convey, and nature often attempts to relieve them by visceral engorgements, dropsical effusions, and hæmorrhages. The desired effect may be far more successfully produced by gradually diminishing the quantity of the fluid ingesta than by the employment of any system of active depletory evacuation;—and the fact, that the palpitations, lividity of the surface, and difficulty of breathing after eating, as well as the sudden nocturnal wakings and paroxysms of dyspnœa from which the subjects of internal vascular disease so usually suffer, in all probability mainly depend upon the admission of an undue quantity of material into the blood, consequent upon the recent process of assimilation, becomes a suggestion that in such cases every unnecessary article of diet, solid as well as fluid, should be dispensed with. It has been found that the quantity of fluid really necessary to support the body in a state of health is exceedingly small, and the amount of solid food absolutely required by a person who uses but little exercise is very far less considerable than is usually supposed. It is, of course, by no means requisite that a patient suffering from arterial or cardiac disease should be suddenly deprived of either fluid or solid food, or should at any time submit to absolute privation by hunger or thirst, but no injury can be done by reducing the quantity of the ingesta to the smallest reasonable standard, while care is taken that their quality shall be of the most nutritive kind. Very small bleedings frequently repeated have been found of considerable efficacy in cases of aorta aneurism, but, when having recourse to this treatment, it would be well to combine with it the use of mild tonics: I believe that by far the best mode of removing fluid in these cases is by keeping up a gentle action upon the skin and kidneys.

A careful adherence to the course of treatment which I have endeavoured to sketch out will also tend to effect the last mentioned, and probably the most important therapeutic indication in this and in many other forms of organic vascular disease—to maintain the strength of the left ventricle. We have seen that, when life is much protracted in aortic dilatation and aneurism, this cavity is liable to become dilated and to fail in its power of contraction, while, on the other hand, weakened action of the heart produces increased delay in the dilated arterial tract, which consequently suffers distension and becomes liable to rupture. Diminution of the fluids, rest, and gentle tonic treatment, tend to preserve the muscular power of the heart, and to maintain the due capacity of its cavities, and may, to a certain degree, restore these properties when they have failed in consequence of disease.

The administration, under these circumstances, of digitalis, the acetate of lead, and other medicines which have a direct tendency to lower the action and depress the power of the heart, cannot, I submit, be too earnestly deprecated. I believe that the former of these medicines is generally used, in organic diseases of the heart

and great vessels, with very mistaken views of the pathology of those affections. The great error appears to be still often committed of regarding palpitation as though it were itself the disease, and not, what it really is, the sole means by which an obstructed and overloaded heart is enabled to propel its contents.—and hence of employing medicines which check the palpitation without removing its causes. But the rational plan of treatment here obviously is, to remove the causes of obstruction from which the heart suffers, where they are not of a permanent nature, or, if that be impossible, to diminish the load of fluid which embarrasses the heart, and then the palpitation, being no longer requisite, will abate of its own accord.

Digitalis has merely escaped the odium of being generally considered to exercise a deadly influence in aortic aneurisms and in heart diseases, by virtue of its diuretic effect. Its depressing power is not always sufficient altogether to paralyse the action even of a diseased heart, and the temporary relief of symptoms which it produces, by lessening the quantity of the fluids, has led to the belief that its effects are, upon the whole beneficial. But there are many other diuretics which may be used in cases of dilatation, which are quite as efficacious as digitalis, and far more safe. It is certainly an unwise measure to administer a remedy which its advocates justly term "the direct sedative of the heart" in a class of diseases where all the worst symptoms arise from the difficulty that organ experiences in propelling its contents; and where, in the natural progress of the structural alterations in its cavities consequent upon protracted obstruction, death eventually occurs from exhaustion of its contractile power.

Medical Gazette, August 29, 1845, *p.* 774

99.—LIGATURE OF THE COMMON CAROTID, FOR ANEURISM OF THE INNOMINATA AND ARCH OF THE AORTA.

By George W. Campbell, Esq., M.D., Montreal.

[J. S. aged forty-eight, tall, strong-built; had been a soldier twenty-four years, but left the service two years before; had long been addicted to the intemperate use of ardent spirits. For several years had had occasional severe pain in the right shoulder, and side of the neck and head, which he thought was rheumatism. A fortnight before consulting Dr. Corrigan, when splitting wood, with the axe at full stretch above his head, he felt something give way at the lower part of his neck, attended with sudden gasping for a few seconds. On putting his hand on the part, he felt a small pulsating tumour, which he would not have noticed but for its rapid growth.]

When first I saw him, says Dr. C., the tumour had attained the size of a large egg, was visible both upon the tracheal, and external margin of the streno-cleido-mastoid muscle, measuring three inches and a quarter in its longest diameter, which was transverse to the

axis of the neck, and extending vertically above the sternum and clavicle for two inches and a half; it could be followed into the chest, and was felt pulsating as low as the junction of the cartilage of the second rib with the sternum. The tumour was capable of being almost entirely dispersed by compression, the pulsation being equable all over its surface, apparently increasing in proportion to the pressure employed, at each impulse strongly elevating the fingers, and whenever the pressure was removed, instantly regaining its original dimensions. Upon firmly compressing the carotid artery of the right side, against the transverse processes of the cervical vertebræ, the pulsation in the tumour was arrested, and it became soft and flaccid. A similar effect was produced, but not in so marked a degree, by compressing the subclavian over the first rib. The pulse was equally good at the wrist, and in the branches of the carotid on either side. On percussing the chest, the inner portion of the right sub-clavicular region was found to sound dull, and upon the application of the stethoscope, a distinct pulsation was discovered in that situation, gradually losing its intensity as the heart was approached. This pulsation gave a strong impulse, was double, was not attended by any thrill, and by only a very slight bruit de soufflet; it might be compared to a heart beating strongly at the top of, and to the right side of the sternum. Neither bruit nor thrill was discoverable in the tumour above the clavicle.

The patient was examined by several of my professional friends: they expressed a pretty unanimous opinion that the case was one of aneurism of the innominata, and that it was one, the history and symptoms of which justified an operation, but they advised in the first instance to try the effect of a restricted diet and the exhibition of digitalis with avoidance of all exercise. This plan was persevered in very strictly for a fortnight, at the end of which period, although the general force of the circulation was much diminished, and the man had become weak and pale, the tumour still continued to increase slowly in bulk, and its parietes, both external and internal to the sterno-mastoid muscle, became very thin. As the aneurism, if left to itself, would evidently very shortly prove fatal, and as, by its extension both in an upward and outward directions, it was daily adding to the difficulty, and diminishing the prospect of success from an operation upon either of the great arterial trunks, it was resolved to give the patient the chance afforded by the operation upon the distal side of the tumour, so ably advocated by Mr. Wardrop. Upon frequent trials, it was found that compression of the carotid had a more marked effect upon the circulation within the aneurism, than compression of the subclavian: —it was therefore selected as the vessel from the ligature of which the greatest benefit might be expected.

Operation.—The operation was performed on the 8th of March at eleven o'clock in the forenoon. I was assisted in it by Drs. Holmes and M'Culloch, and from fifteen to twenty of my professional

friends favoured me with their presence. The patient was placed upon a table in the recumbent posture, with the head and shoulders slightly elevated, the neck extended by raising the chin, and inclining the face towards the opposite side. An incision about three inches long was made through the skin and superficial fascia, along the anterior border of the sterno-mastoid muscle, extending from a little below the angle of the jaw, to the superior boundary of the tumour, which was upon a level with the cricoid cartilage; the platisma and deep fascia were divided to the same extent upon the director, the sterno-mastoid and omo-hyoid, which were now distinctly brought into view, were respectively drawn outwards and inwards by broad retractors, and a little further division of the cellular tissue by a silver fruit knife, and the finger nail, exposed the sheath of the vessels. Owing to the muscularity of the neck, the artery lay at a considerable depth from the surface; the integuments being borne off the sheath of the vessels by the strong contraction of the mastoid muscle, a very large vein was seen crossing the artery, apparently coming from the thyroid body, and passing obliquely outwards and downwards to empty itself into the deep jugular; the vein being drawn upwards, and the sheath being opened, an aneurismal needle, armed with a well-waxed single silk ligature, was passed round the artery; the vagus nerve was seen external to the artery, but the deep jugular vein did not come into view. The artery was raised a little from its sheath upon the ligature, to ascertain the condition of its coats, which were found very sound and healthy; the ligature was then gradually tightened and firmly secured by a common double knot, one end of it being afterwards cut off. Immediately upon tightening the ligature, the aneurismal swelling completely disappeared, and no trace of it could be discovered for several minutes; after a short time, however, it began gradually to return, but it did not nearly regain its original size, measuring only two inches in the transverse diameter, and and rising little more than an inch above the sternum; the pulsation was by no means so strong, and it was much softer, and more compressible than formerly. The pulse before the operation was ninety-six, during the operation it sunk to eighty-eight, and became very small, immediately afterwards it again rose to ninety-six: little or no blood was lost. Immediately upon tightening the ligature, the patient complained of severe pain in the side of the head, the pupil of the opposite eye became slightly dilated, he felt for a few moments bewildered and confused, and could with difficulty be induced to remain quiet. The wound in the integuments was brought together by the interrupted suture, a compress and bandage were applied over the aneurism, and the patient was put to bed with his head and shoulders elevated. The liniment. sapon. c. opio was ordered to be applied hot, to the side of the head, where he complained of the pain; the digitalis was to be continued, and the diet was restricted to toast and gruel in small quantities.

[Three hours after the operation the pulse was 120, sharp and full, he had a teasing cough, and the pain in the side of

the head was still complained of. He was bled to fourteen ounces, and nitrous julep with antim. tart. ordered. At ten at night, the pulse was one hundred and sixteen, pain of the head removed by bleeding, and he felt generally better. Calomel and colocynth at bed time, and solution of morphia to procure sleep.

He continued improving till twelfth of March, when feverish symptoms re-appeared, but were immediately checked by bleeding. The tumour diminished; no pulsation to be felt in any of the branches of the carotid. On the twenty-second, the wound had nearly cicatrized, the tumour was quite flat, and only to be discovered by slight pulsation; the pulse had returned to the temporal artery. The compress was discontinued; digitalis and low diet to be persevered with.

On the twenty-third he was much worse from improper exposure the previous evening; he was slightly delirious, with much headache, hurried respiration, and a sharp pulse of one hundred and forty. The heart's impulse was so strong as to shake even the bed on which he lay. Bleeding was considered the best course under the circumstances, and was accordingly performed to twelve ounces, with marked benefit; and a mixture ordered with hyoscyamus, nitrate and cyanuret of potass. In the evening he was relieved by these means, but harrassed by return of the cough, and complains of a sense of suffocation. Three cathartic pills ordered.

He seemed recovering from the effects of his imprudence, but on the twenty-seventh at two o'clock in the morning, sent for Dr. Corrigan. He had then great dyspnœa, livid countenance, pulse one hundred and fifty, very small, heart's action exceedingly tumultuous, and two pulsating tumours were felt, rising up on both sides of the sternum. He died at five o'clock in the afternoon.]

Post-mortem examination fifteen hours after death.—The surface of the upper part of the chest, neck, and face presented a livid appearance, from venous engorgement. Upon opening the thorax, a large tumour was discovered, resembling very much, in size and appearance, the heart enclosed in the pericardium, occupying the superior portion of the right side of the chest, and extending towards the left side, half an inch beyond the centre of the first bone of the sternum. The tumour filled up the whole of the anterior and middle mediastinum, above and in front of the root of the right lung, extending from the cartilage of the third rib to the top of the sternum. The tumour was removed from the body along with the heart and great vessels within the thorax; the upper part of the sternum, with the inner half of the clavicle, and the first, second, and third ribs attached to it; the trachea, œsophagus, anterior muscles, great vessels, and nerves of the neck, were also removed, as far up as above the os hyoides, and the whole was subsequently carefully dissected. The left ventricle of the heart was found slightly hypertrophied, the aortic valves were free from disease, the ascending aorta was greatly dilated, and numerous scales of bone were found deposited in and under its lining mem-

brane. The aneurismal swelling commenced at the root of the arteria innominata, involving the whole of the anterior parietes of that vessel, to within a quarter of an inch of its bifurcation, and the transverse portion of the arch of the aorta, as far as the giving off of the left carotid, the origin of which was slightly dilated. The first bone of the sternum, the sternal ends of the clavicle and first rib, were denuded of periosteum, and formed part of the anterior wall of the aneurismal sac, the first bone of the sternum being deeply hollowed out by the pressure of the contained blood. From the superior part of the large tumour, the remains of two smaller aneurisms were found arising; the posterior one, the larger, extended into the neck, upwards, and towards the right side, for at least a couple of inches above the clavicle; its sac in front was composed of the deep cervical fascia, and external and internal to the mastoid muscle, was exceedingly thin and weak. The sac of the anterior aneurism was capable of containing a small walnut; it arose from the large sac about the centre of the sternum, by a distinct opening immediately in front of that into the posterior aneurism; the sacs of both these aneurisms were found empty and collapsed. The interior of the large aneurism was almost completely filled by a large coagulum, weighing eight ounces and a quarter avoirdupois, very dense in structure, not deep in colour, formed of distinct lamellæ, and in many places slightly adherent to the parietes of the sac. A loose coagulum of blood, very different in appearance and structure from the fibrinous mass occupying the interior of the aneurism, was found in the ascending aorta. The descending aorta was dilated as far as the diaphragm, and contained ossific deposits in its interior. The right carotid was found nearly divided by ulcerative absorption, produced by the ligature, half-an-inch below its division; the vessel was plugged up by a firm coagulum, for upwards of two inches below the ligature, the superior part was filled up in a similar manner as far as its bifurcation. The superior part of the right lung was found condensed in its substance, from the pressure of the tumour. The left lung was congested throughout, and posteriorly and inferiorly was found in the first stage of pneumonia. The liver was larger and harder than natural; theother abdominal viscera were healthy. The brain was found quite healthy, and the branches of the internal carotids seemed equally large on both sides.

Monthly Journal of Medical Science, June 1845, *p.* 45.

100.—*On the Arched Tourniquet for Wounds of the Brachial Artery.* By William Craig, Esq., Ayr. [In Retrospect, volume ix. article 85, we noticed a case of wound of the brachial artery, which Dr. Oke cured by using an arched tourniquet. Mr. Craig has since used the same instrument with advantage. A man presented himself who had had the brachial artery the previous day in bleeding; the usual signs of aneurismal varix were present. Compression and bandaging were tried to no purpose. Mr. C., wished on principle to avoid operating, which in this case would have been easy.

By pressing the artery with the finger in its course, about the middle of the inside of the arm, pulsation at the tumour and in the wrist was quite suspended. As the patient could bear the necessary pressure, all that was needed was a substitute for the finger.]

With this view, says Dr.C., I made a quadrangle with four pieces of wood, sufficiently large to encircle the arm ; also a piece of wood 2½ inches broad, and long enough to reach from the shoulder to the elbow. This was laid on the outer aspect of the arm. One side of the quadrangle was fixed to the wood thus placed, at a point opposite to that where compression was to be made on the vessel. A pad was placed over the artery a little below where the superior profunda is given off, care being taken not to involve the nerve in the compression. The pad was pressed firmly there by means of a rude sort of screw passing from the side of the quadrangle opposite, to the one fixed to the wood placed along the arm.

The patient was put to bed, and placed in the recumbent position, and the arm raised in a perpendicular direction, and supported there by being suspended to the bed-post, and the pad made to press with such force as to suspend pulsation both in the tumour and at the wrist. The pressure was unremittingly maintained during 24 or 30 hours, at the end of which time the pulsation and bruissement had completely subsided. The arm was kept raised for some days afterwards, with a pad over the tumour, and all excitement and stimulation avoided.

For a considerable time after this treatment the patient complained of pain at the bend of the arm, arising evidently from the severe compression over the tumour before the application of the apparatus. However, this went gradually off.

It may be proper to remark, that the object aimed at by raising the arm was, that the blood thus acting against its own gravity, and consequently with less force, would require less pressure to stop the arterial current.

One peculiarity of this application is, the provision for preventing any compression of the limb except that which is indispensable over the artery. When the arched tourniquet is applied, there will be a corresponding degree of pressure at the point opposite that on which compression is made on the artery, and consequent compression of the textures between it and the bone, which must, by using it in such a case, add to the suffering of the patient. The piece of wood placed along the arm on its outer side, extending from the shoulder to the elbow, causes the counter-pressure to be diffused over a large surface of the arm, thereby rendering it nearly imperceptible to the patient.

I am not aware that this plan of treatment has ever before been adopted in such accidents. Plenck invented an instrument for making pressure on the wound at the bend of the arm, without pressing upon the whole circumference of the limb.

If the same success follow the adoption of this mode of treatment in future as has resulted in this case, it will certainly go far to supersede the necessity of applying the ligature.

Medical Gazette, June 13, 1845 *p.* 279.

101.—TREATMENT OF ANEURISM BY COMPRESSION.

By J. M. O'Ferrall, Esq., M.D., M.R.I.A., &c.

[In Retrospect volume XI, article 77, we gave some valuable remarks on the treatment of aneurism by compression, by Dr. Bellingham, with the particulars of two successful cases thus treated, one by Mr. Greatrex, the other by Mr. Newcomb. Dr. O'Ferrall makes the following remarks on a case which he has lately cured by these means.]

There are few practitioners so rash, as, with our present knowledge, to advise the operation of cutting down upon the femoral artery, for the cure of popliteal aneurism, before compression has been tried. Least of all, would such counsel come from those, who have ever witnessed a secondary hæmorrhage, or that fatal accident, the puncture of the femoral vein—a misfortune which sends the spectators home in sadness, and the unhappy patient to his death bed.

The treatment of aneurism by compression, should be considered as established. There is no other mode under which so many cases in hospital and private practice have followed each other in uninterrupted succession without a failure. There is no other, which, from its safety, so deserves to be pressed upon the attention of those entrusted with the treatment of popliteal aneurism. It requires only one thing to ensure its success,—patience ; that patience, which in itself, is skill, and which, instead of chafing at disappointment, calmly views the untoward occurrence, as a phenomenon, the cause of which is to be ascertained, and its removal, as a problem to be solved.

Assuming, as we have a right to do, that a collateral circulation is to be accomplished, we should not, even if we could do so, obliterate, at once, and without preparation, the current through the affected vessel. It is the attempt to do this, which, if it were possible, would be injudicious, that, so often creates the impression of temporary failure. If we should succeed in lessening, in a remarkable degree, the amount of blood transmitted through the artery and the tumour, we at once give rise to the physiological effort to substitute new channels, and, from that moment, the cure may be said to have commenced.

The phenomena which announce a change in the circulation in the limb, may be described as consisting of two orders—1st, those of obstruction, and 2nd, those of compensation or restoration.

Among the earliest changes, which follow the application of the instrument, is a change of colour, and a swelling of the limb.

The superficial viens become turgid, and the same condition of the capillary viens, is indicated by the general purple colour of the skin. To these are added, a certain degree of numbness, mentioned by the patient, and to our own observation, a slight but appreciable fall of temperature in the foot. The tumour in the ham sinks, and its pulsation is diminished. The arteries of the foot, if they were perceptible before, are no longer felt.

This state of obstructed function, does not, however, last very long. The second order of phenomena, or those of restoration, soon begin to be perceived in the venous system of the part. The anatomical arrangement of this system, is happily favourable to this event. It is known, as stated by Beclard, that the anastomosis of the capillary venous system, is much more free than that of the arteries. This anatomical fact is frequently illustrated in the various modes of treatment adopted for the cure or mitigation of varix. But, although nature is generally adequate to the task of restoration, you must always remember that it cannot be suddenly accomplished. Your province is, to direct the treatment, and the more intimate yonr acquintance with the laws of healthy and diseased action, the greater will be your competency for this important duty. You must see that the powers of the part are not too severely, or suddenly tried, and you have it in your power to modify the obstruction, by suitable position of the limb and adjustment of the apparatus.

After the lapse of a few days, you find that the degree of pressure, which at first produced a purple intumescence of the whole limb, is now borne without inconvenience. The collateral venous circulation is, in fact, in full operation. That of the arteries is later in its development, but in due time follows that of the viens, and the superficial branches give evidence of a liberal supply from the external circumflex and other sources.

Where this stage of the treatment is attained, you may direct your pressure with a bolder hand. The period is then arrived, when you may, for moderate periods, obliterate the impulse in the tumor altogether. You may also apply your pressure at a point higher up in the artery, and give repose to the parts lower down. It is at this stage that you may employ a weight of 3 or 4 pounds at the groin, and avail yourself of the assistance of the patient himself. In the case before you the man preferred much the pressure of a weight, in that situation, to the action of the instrument. He was able to command the artery, with tolerable precision, and without fatigue. Slight movements of the limb had not the effect of displacing it, and, except in sleep, he was able to keep it in its place.

[Allusion is made to one source of temporary failure, which may in some cases have caused an abandonment of the treatment when the cure was close at hand. This is the non-adaptation of the instrument to different sized limbs, or its non-adjustment to the same limb at different periods of the treatment, when from

various causes, as the shrinking of the muscles for want of exertion &c., the size of the limb becomes altered,]

It would be tedious to describe the shape and principle of the different instruments which have followed each other in succession. You are familiar with them all. The great difficulty in their construction, is to prevent the padded plate or point of counter-pressure from rolling on the limb. The least movement relieves the artery from the pressure, and the pulsation returns in full force. The instrument which is least liable to this objection, is that constructed by Mr. Read, of Parliament-street. It has two advantages in its construction. The plate which embraces the external and posterior aspect of the thigh, is bent in its long axis. It describes an angle instead of an arch, and certainly has not at all the same disposition to roll on the limb. The anterior or direct pressing force is regulated by a ball and socket, or universal joint. You can by this contrivance, alter the angle of incidence, and direct the power to any point required.

One or two points in the application of the instrument deserve perhaps to be noticed. I have formerly shown the great advantage of position, in operation on parts, or tumors, much loaded with blood; and you are aware how constantly we avail ourselves of position in the treatment of all diseases of the lower extremities. The course pursued in the present case, and which I recommend for your adoption is this. Place the limb on an inclined plane, the heel being higher than the knee. After a few minutes, the venous system of the part will become less distended. Then place a long wooden splint about four inches broad and well padded, along the outside of the limb, and fix it in its position by straps of adhesive plaster, which shall extend only two or three inches beyond its margins, so as to catch the skin. Over this splint the instrument is laid and adjusted, so as to bring the opposite, or screw part over the artery. The advantage of this arrangement is, that the counter pressure is divided over the whole length of the limb, and, is no longer a source of inconvenience to the patient. The capillary turgescence is also much diminished by the position, and thus, the first shock to the circulation, or that from sudden obstruction is modified, in a remarkable degree. Position lessens the force of the arterial current, while it favours the return of the venous blood, by gravitation. It thus diminishes the apoplectic congestion, which otherwise prevailes ; while the artery is commanded by a more moderate, and therefore more tolerable pressure. Position is I believe capable of effecting the object intended by those who employ the bandage; while it does not interfere with the supplementary circulation about to be established. This remark appears to be rendered necessary by the recommendation of "a light compression of the entire limb," by M. Girardes, in an excellent paper on this subject, published in that valuable periodical the *Journal de Chirurgie.*

After some time, the position of the limb may be altered, to prevent fatigue, and resumed as occasion may require.

Should Mr. Read's angular splint be found to succeed, the long wooden splint will not, of course be required ; but the position of the limb will be equally available in any case.

Thus you see that many elements enter into the successful treatment of popliteal aneurism by pressure. A skilful patience, and a proper deference to the physiological laws which regulate the circulation, will prevent the disappointment which is occasionally complained of in the early stage ; while a suitable position —the proper adaptation of the instrument to the limb—and varying the degree, situation, and mechanism of the pressing force—will, at the proper time, enable you to conduct the case to a fortunate termination.

Dublin Hospital Gazette, October 15, 1845, p 66.

[Mr. Harrison, surgeon to the Bristol Infirmary, has published a report of the treatment by compression, adopted by him in three cases of anuerism, with detailed results. Some of the interesting facts contained in it, we transfer to our pages.

The patient in the first case was forty-two years of age, healthy in appearance ; admitted for popliteal aneurism of the right leg. It was determined to attempt the cure by pressure on the femoral artery.]

The plan of pressure was accordingly commenced October 3d, by the application of Weiss' Presse Artère, one pad of which was placed over the femoral artery at the groin, and the other on a small splint behind the great trochanter. The screw was tightened, and the current of blood through the femoral artery arrested : the limb was also firmly bandaged from the foot to the groin. When the pressure was sufficient entirely to interrupt the current of blood through the vessel, the patient became very uneasy, and would seldom endure it longer than half an hour without unscrewing the tourniquet ; still, a degree of pressure, allowing only a feeble pulsation to be felt in the aneurismal sac, was kept up for many days, and occasionally the current of blood through it, as before stated, was altogether arrested. A variety of alterations in the mode of applying the Presse Artère were tried with a view to lessen the inconvenience to the patient, but his irritability was so great that the plan was ultimately abandoned. This mode of treatment was, however, persevered in for a fortnight, and the collateral circulation appeared to have been decidedly influenced, as pulsation was distinctly felt in the articular arteries about the knee, when it was completely arrested in the femoral artery by the pressure at the groin. No material alteration, however, was observed to have taken place in the state of the tumour. At the patient's earnest request that the plan of pressure should be relinquished, and an operation performed instead, a consultation was held, and it was agreed to tie the femoral artery ; but the operation was postponed for some days to allow the superficial inflammation of the skin, produced by the pressure, entirely to subside.

[The operation was performed on the 1st November, with scarcely any loss of blood. The patient did well; by the 15th, pulsation could be felt throughout; temperature of the limbs equal.

There can be no doubt that the pressure applied in this case, though imperfectly maintained, prepared the collateral vessels for carrying on the circulation; and this was further evidenced by the slight disturbance to the system, and continued equality in the temperature of the limbs, which followed the operation.]

Admitting it therefore as probable that these favourable circumstances resulted in part from the pressure thus employed, it may perhaps be worthy of consideration whether in cases of aneurism where the disease is so situated that compression upon the cardiac side of the tumour is impracticable, the temporary employment of the Press Artère upon the distal side of the aneurism, immediately below the seat of disease, might not prove serviceable in developing the anastomosing branches, and thus preparing them for their increased duty when the main artery is eventually secured by ligature above the aneurismal tumour.

[The next patient was a younger man, healthy, muscular, by trade a moulder. The aneurism in this case was situated at the bend of the right elbow, of the size of a small walnut. The sac could be easily emptied, when pressure was made on the brachial artery above the tumour. It is probable that puncture of the artery, when the man was bled, a few days before, was the cause.]

A compress was ordered to be placed upon the tumour, and a band firmly applied from the hand to the axilla. The bandage was kept wet with cold water. This plan was pursued for about ten days. when, as the tumour was found to be increasing in size, the bandage and compress were discontinued, and Weiss' Press Artère applied over the brachial artery, a short distance above the internal condyle of the humerus. The patient was kept in bed on low diet, and the limb placed in a moderately elevated position. Some difficulty was experienced in maintaining an adequate degree of pressure upon the artery, from the occurrence of difficulty of breathing, and pain in the head, when the instrument was applied with sufficient firmness to arrest all pulsation in the aneurismal sac. These symptoms rendered a slight relaxation of the Presse Artère necessary from time to time; firm pressure was, however, kept up during each day, with occasional relaxation, and moderate pressure in the night, until the 28th, when, the tumour appearing rather increased in size, the arm was ordered to be firmly bandaged, in addition to the other treatment, and the Presse Artère to be continued.

[The tumour diminished in size, became harder, and finally disappeared almost entirely, pulsation at the wrist becoming established in the same proportion, and in about two months from the commencement he was discharged cured.]

In this case pressure was maintained upon the brachial artery with tolerable steadiness, but slight pulsation was seldom absent from the tumor for any considerable period, during the earlier stages of the treatment. The case is interesting from the length of time the pressure was persevered in, and its eventual success. The integument at the seat of compression was never so much inflamed as to require particular attention. Probably, if the circulation through the sac could have been completely arrested for longer periods of time, without relaxation, the process of cure would have been much shortened, but the constitutional symptoms induced by the pressure rendered the relaxation of the Presse Artère necessary from time to time. The patient's arm was very muscular, and the pulsation in the tumor, previous to treatment, remarkably strong.

[In the third case, the aneurism was situated in the right groin. The man's occupation was that of a carter, and he had frequently to lift heavy weights.]

The aneurismal tumor extended nearly half-way down the front of the thigh, and to its outer side, passing upwards under Poupart's ligament, above which it could be distinctly traced two inches, involving the anterior superior spinous process of the ilium, and extending towards the internal ring. Percussion was dull in the inguinal region, but became natural about four inches above Poupart's ligament. The tumor pulsated throughout its whole extent, and a loud soufflet was always audible with the stethoscope. There was also a peculiar double beat heard above Poupart's ligament, which was not distinguishable a short distance below it. Firm pressure a little above Poupart's ligament arrested pulsation in the tumor. The right thigh, which was swollen to nearly twice the size of the other, was flexed upon the pelvis, and rotated outwards : the knee was also flexed upon the thigh. The patient was unable to extend the thigh or knee, and the attempt to do so produced severe pain. He was evidently suffering excessively; his pulse was 120, and his aspect indicated considerable constitutional disturbance ; the stethoscopic examination of the heart was satisfactory. After three or four days' rest, some regular doses of opium, and an evaporating lotion to the tumour, his condition was improved, his pulse was 100, and his nights less disturbed. A consultation was held upon the patient, June 17th, and an immediate operation determined upon. The great size of the tumor, which, as before stated, could be felt extending two inches above Poupart's ligament, involving the anterior superior spinous process of the ilium, rendered it a matter of doubt whether the ligature of the common iliac might not be required, The line of the incision was on this account, and from the extent of the aneurismal sac, necessarily commenced higher and more to the outer side than would be required for the exposure of the external iliac. Still, the fact that the circulation through the tumor could be arrested by pressure above Poupart's ligament, favoured the suppo-

sition that the external iliac was sound, and that a ligature might be placed upon it.

The operation was performed at two o'clock, June 17th. An incision six inches in length, commencing about two inches above and external to the anterior superior spinous process of the ilium, was carried downwards and inwards in the direction of the internal ring; this exposed a portion of the external oblique muscle and its tendon, which were divided on a director to the extent of the external incision. The internal oblique and transversalis muscles were next divided, and the peritoneum detached from its connexion with the fascia. This part of the operation required much caution. The vessel was now brought into view, the bag of the peritoneum being held back with a curved copper spatula by an assistant. The tumor could be felt pulsating on the outer side of the external iliac artery, apparently extending high up into the pelvis. The artery appeared quite sound above Poupart's ligament, immediately beneath which it felt rather dilated. The vessel could be easily traced with the finger beyond the origin of the internal iliac. It was somewhat displaced by the presence of the tumor on its other side, but came into view with great facility. About an inch above Poupart's ligament the artery was now slightly separated with the point of a scalpel from its lateral attachments, and the needle easily passed under the vessel. Pulsation ceased in the tumor the moment the ligature was tightened, nor was any increased pain felt by the patient where it was tied. Very little blood was lost during the operation, which the patient bore well, and appeared cheerful immediately afterwards.

The edges of the wound were brought together with three sutures, dressed lightly, and a bandage applied, a full dose of opium was administered, the limb wrapped in flannel, and kept in a moderately elevated position.

[Tetanus followed on the seventh day, and the man died on the next.]

Post-mortem examination nine hours after death.—Body not emaciated; right limb much reduced in size; tumor also considerably diminished; the wound appeared nearly united in two-thirds of its extent; the superior third presented healthy granulations. The contents of the abdomen being exposed by the removal of the anterior parietes, the external surface of intestines appeared quite free from inflammation. There was a slight adhesion of long-standing between the cœcum and peritoneum. The intestines were removed from the abdomen, and to preserve the diseased parts for the museum, the tumor was detached from its situation, together with the pelvic vessels and nerves.

In the course of this separation, the aneurism which descended about eight inches in front of the thigh, and to its outward side, covered by the fascia lata and crossed by the sartorius, was found to penetrate very deeply among the muscles, rendering extensive dissection around the hip joint necessary before the tumor could be disengaged from its attachments. In doing this, the sac was

unavoidably opened close to the joint, and between twenty and thirty ounces of dark semi-coagulated blood were discharged. A portion of the sciatic nerve, which was attached to the sac, was much removed with it. The superior division of the tumor extended several inches above Poupart's ligament on the outer side of the vessels, and, as far as the altered state of the parts, from the pressure of the disease, would permit it to be ascertained, appeared to have passed beneath the crural arch, and to have been covered with the fascia iliaca.

Continuing the dissection of the aneurismal sac and vessels now separated from the body, the femoral artery, which was lying on the front of the sac, was slit up from its lower extremity, and in its anterior aspect. The vessel was dilated until opposite the orifice of the profunda, where its posterior coat terminated abruptly in a crescent-shaped margin, the commencement of a fissure in the posterior coat of the artery; this fissure led directly into the aneurismal sac. For a short distance above this opening the vessel was rather dilated, but was quite sound at the point of ligature, which was about an inch above Poupart's ligament. A firm coagulum was found in the vessel above the ligature.

The aneurismal sac appeared to have been formed at two separate periods; that portion immediately leading from the femoral artery was composed, apparently, of a dilatation of the proper coats of the vessel, was of the size of a small orange, and communicated by an irregular opening with the larger sac. In this latter portion of the tumor the arterial tunics could no longer be traced, but its walls seemed to have been formed by condensed cellular membrane externally, and the deposit of successive layers of fibrin within. This larger sac would result from the giving way of the true aneurism, and probably occurred at the time the tumor began to increase so rapidly, three or four weeks previous to the operation.

There are some interesting features in this case. The stethoscopic phenomenon of the double beat, heard above Poupart's ligament, and which was not audible below, has not, I believe, been usually observed in cases of this nature.

Possibly it might have been due to the integrity of the external iliac artery, and the presence of the aneurismal sac on the outer side of that vessel. The line of incision, which was adopted in the operation with a view to expose the common iliac, if necessary, was more extensive than that usually recommended for the ligature of the external iliac; and from the projection of the tumor above Poupart's ligament, was necessarily higher at its termination near the internal ring. No vessels requiring ligature were divided, and plenty of room, though the subject was muscular, was afforded by this line of incision. The internal iliac artery was easily reached with the finger at the time of the operation, the external iliac being readily brought into view. The ligature was applied with but slight disturbance to the surrounding parts, and the dissection proved that no nerves were included with the vessel. It

would appear probable, from the satisfactory state of the parts implicated in the operation, as evidenced by the examination after death, that had no tentanus supervened, the patient might eventually have recovered.

[We would respectfully recommend to the reader a perusal of Dr. Bellingham's Observations on the Use of Compression in Aneurism, where he will find that slight and graduated pressure is alone necessary, with full and clear directions for its application. They are published in the *Dublin Journal of Medical Science*, for May, 1845, and a short account of them is contained in Vol. XI. of of our Retrospect, Art. 77.]

Medical Gazette, Oct. 3, 1845, p. 966.

[In Retrospect, Vol. XI., Art. 77, On Compression in Aneurism by Dr. Bellingham, the occasional occurrence of gangrene from a ligature applied to an aneurismal sac, is noticed. Œdema, from the long-continued pressure of the tumor, with compression of the veins, and perhaps obliteration of the arteries, being thus caused, one of the editors of the *Gazette*, remarking on this, says,]

A case illustrating this fact occurred under our notice some years ago. A very powerful man was admitted into one of the metropolitan hospitals, with a large circumscribed popliteal aneurism, for which the femoral artery was secured at the usual spot. Shortly after the operation, the sac enlarged; and then the limb swelled, and gangrene commenced in the foot. The limb was amputated; but arterial oozing, which it was found almost impossible to restrain completely, occurred from all parts of the stump, and the man died within twenty-four hours. It appeared that the secondary hæmorrhage depended, in a great measure, upon the enlargement of the collateral vessels, consequent upon the large size of the aneurism. The case left the impression upon our mind that neither ligature nor amputation could be safely had recourse to in instances of that description, where the sac was unusully large.

Medical Gazette, June 27, 1845, p. 392.

102.—ON THE OPERATION FOR FEMORAL ANEURISM.

By Bransby B. Cooper, Esq., Surgeon to Guy's Hospital, &c.

[The following account of a rather different mode from that usually adopted for securing the external iliac artery in cases of femoral aneurism, we have thought might be of service to some of our readers.

H. S., æt. 51, healthy looking, spare, of phlegmatic temperament, admitted into hospital with aneurism of the right femoral. The disease began about four months before, in the usual way, after a heavy stumble ; pain for a while, and afterwards the appearance of a pulsating tumor, which gradually increased.]

The tumor at the period of his admission was raised about two inches above the level of the thigh, and it was about five inches in diameter, entirely occupying that triangular space, the apex of which is formed by the junction of the sartorius and rectus and the base by Poupart's ligament, which the tumor slightly overlapped. The pulsation is equally distinct in every part, and can be checked by pressure upon the external iliac artery, but the tumor, from the solid nature of its contents, cannot be emptied. Upon auscultation a loud whizzing sound is heard accompanying each pulsation, which also communicates a vibratory sensation when pressure is made with the fingers. He complains of pain in the tumor, especially at night; and of numbness down the forepart of the thigh and inside of the knee.

[He was kept a few days in hospital prior to operation; but his general state not allowing further delay, it was therefore performed. Little blood was lost. The limb was swathed in flannel, and kept slightly flexed. Temperature 95°, half an hour after operation; eight hours after it had risen to 99°. He had considerable fever, followed by great prostration, but soon rallied; the tumor was hard, tense, and hot; some pain in the knee complained of.]

Remarks.—It most commonly occurs in cases of aneurism that the patient attributes his disease to some local exciting cause; this man felt pain immediately after stumbling over a stone, and the individual commonly experiences a sensation as if something had given way at the part. From this fact we might be led to suppose that aneurisms arise generally from a local cause; but this I believe never to be the case in what may be called idiopathic or true aneurism, but only in those of the spurious kind. You are all aware that an artery is composed of three coats, which are as highly organized as the other tissues of the body, and are consequently equally liable to inflammation and its effects. Amongst the most common changes, there is a diminution of the proportionate elasticity of the three coats, so that the force of blood not being equally resisted by the tunics, the internal coats yield: a portion of blood immediately becomes coagulated at that part, and a true aneurism is thus formed. In this case the diagnostic marks of the disease were sufficiently obvious; the tumor pulsated over its whole surface; and when pressure was made upon the artery above, this pulsation ceased, but without the tumor becoming as usual flaccid.

[As the plan followed in this operation differed rather from that usually employed, Mr. Cooper thus details it:]

In this operation an incision is made through the skin and superficial fascia of the abdomen, commencing immediately on the outer side of the external ring, and terminating within an inch of the anterior superior spinous process of the ilium, and no part of this incision should be more than half an inch above Poupart's ligament. In depth it should exteud only to the tendon of the external abdominal oblique, without dividing any of its fibres. In this step some hæmorrhage may occur from the circumflex ilii, exter-

nal epigastric, or external pudic branches, which although naturally small, may have become distended from the obstruction of blood through their parent trunk; and should the bleeding be troublesome, the vessel ought to be at once secured.

The next object is to lay open the inguinal canal, which is effected by cutting through the tendon of the external abdominal oblique to the full extent of your first incision. The spermatic cord is then to be drawn upwards and inwards towards the linea alba, and the cremaster muscle pressed downwards towards Poupart's ligament. When this is effected, the fascia transversalis is completely exposed, partly passing down beneath Poupart's ligament to form the anterior layer of the sheath of the femoral vessels, and on the outer side firmly attached to that ligament. The next step is to open the cavity of the abdomen, and this should be effected by dividing the fascia on the outer half of your incision, where it will be found that the peritoneum is very easily pushed upwards; while, on the contrary, if you make your opening on the inner side of the internal ring, the peritoneum in its course to the scrotum, where it forms the tunica vaginalis, is so firmly united to the fascia as to be with difficulty separated, and liable to be torn in the attempt. All that remains now to be done is to separate the artery from the vein, by dividing with your finger-nail the fascia iliaca which covers them; and then, passing your aneurismal needle between the two vessels, its point is directed from within to without, and the ligature tightened with that degree of force necessary to cut through the two internal coats of the vessel. What is the precise degree of force to be employed is impossible to be described by words, and is only to be acquired by practice. I would dwell particularly on the necessity of passing the anuerismal needle from within to without, for if an attempt be made to pass it in the opposite direction, the vein is almost sure to be wounded. The edges of the wound are now to be brought together, either by ligature or strapping, and the patient placed in bed with the aneurismal limb well wrapped in flannel. Some surgeons recommend hot water to be applied to the foot, which in my opinion is wrong, as it excites too rapid a flow of blood through the capillaries. The great diminution in the temperature of the limb after the operation was unusual both as to the period of its occurrence and the degree. I shall take some future opportunity of drawing your attention to the progress of this case.*

Medical Gazette, Aug. 29, 1845, p. 753.

103.—ON SENILE GANGRENE.

A short time since, the subject of gangrena senilis, or, as it is commonly called, Pott's gangrene, from its having been first accurately described by that surgeon, became the subject of discussion

* Aug. 28.—We are authorised to state, that the patient, up to the present date, is progressively improving, and in every respect there is the promise of a happy termination to the case.

at the Surgical Society of Ireland. Mr. Carmichael detailed the case of a gentlemen, about sixty years of age, in whom, when consulted in November last, he found the disease had commenced in the toe next the large one, which was black, and as there was no pulsation either in the femoral or external iliac artery, the former of which vessels felt like a hard cord, the nature of the affection was quite clear. The gentleman had lived well and comfortably, but not to excess. He had, at no time, felt much pain, but there was considerable derangement of the constitution, and the pulse had been at all times irregular; latterly, too, he was in an eternal state of anxiety, with a sort of distressing feeling that he was unable to describe. Within a few weeks of his death, his head became affected, delirium being almost constantly present. During the last few days of his life he became greatly emaciated, and had great difficulty of breathing, frequently gasping for breath. The extreme emaciation and general derangement of the system did not probably arise from the gangrene, but from a gradually increasing obstruction to the circulation of the blood, and consequent affection of the nervous system. In the treatment opiates were the principal remedies used, morphine having been given in doses of half a grain or a grain two or three times a day; and from this medicine alone did the patient obtain the slightest relief. The state of anxiety surpassed anything he had ever witnessed. In consultation with Sir P. Crampton, Mr. Cusack, and Mr. Adams, all were under the impression that the disease might have arisen from arteritis (the opinion of Dupuytren), and with this view of the case, leeching was tried, but not general blood-letting, as Dupuytren has recommended. The leeches were applied along the course of the femoral artery, but not within several inches of the mortified parts. This treatment, however, was not attended withany advantage; quite the contrary, and it was found necessary to let the patient return to his usual mode of living. At the end of January the gentleman died. Upon examination post-mortem the heart was found in a state of fatty degeneration, very deficient in muscular fibre, and appearing evidently to be incapable of performing its functions. How far this condition of the heart was concerned in the production of the disease, might be a useful question for consideration. The liver, also, was diseased, having a pale ash-coloured aspect; and so soft, that, with the slightest pressure, the finger passed into its substance. In the kidneys there was found a tendency to granular disease, though not actually amounting to that. In the left iliac artery—the side first affected—he could not say that *any sign of inflammation* existed, but it was plugged up with fibrin even to the bifurcation of the aorta. There was no appearance of this sort in the iliac artery of the right side; but at the commencement of the femoral, the same fibrinous deposit was found; and in this artery, too, no pulsation could be felt three or four days before death. The femoral and iliac veins were also plugged with fibrin. Mr. Carmichael directed the attention of the Society to the absence of signs of inflammation along the course of the vessels; as here was a question of great

importance in treatment. Dupuytren, looking upon the disease as an inflammatory affection, treated it by general blood-letting, and in a few cases with success. Pott was inclined to attribute the disease to the deposition of osseous matter in the arteries in persons of advanced age; but in such persons depositions of this kind are to be found every day, and yet this disease is absent. Mr. C. then referred to two instances in which persons affected with diabetes mellitus, died from gangrene of the foot. Dr. Hutton detailed the case of a patient, between 50 and 60 years of age, who at first complained of severe pain in the groin, extending down the course of the femoral vessels, with extreme tenderness to the touch. In a day or two after, the artery felt like a hard cord; the patient complained of severe pain in the limb, with inability to move it, and insensibility so great that pinching or forcible pressure upon the limb was not felt. It did not swell, but assumed a mottled appearance of various hues; the patient suffered extremely from a sense of burning heat in the limb, though its temperature, at one time, was found to have fallen below that of the surrounding atmosphere; however, it soon reached that of the ward in which he lay, namely, 66 degrees. At the post-mortem examination, there was found in the aorta, above its bifurcation, a colourless clot, containing in its substance a thick brownish fluid, resembling pus mixed with blood; a plug of yellow albuminous matter filled the external iliac artery up to the bifurcation of the aorta; the lining membrane of the arteries had a roughened appearance, having lost its usual smoothness and polish, and the vasa vasorum were found much engorged. Carswell says that in some instances the disease is attributable to coagulation, without inflammation; however, it appeared to him (Dr Hutton) that in the present instance the plugging of the vessels was due to inflammation.—Abridged from the *Dublin Medical Press*, Feb. 19th, 1845.

[There is a very remarkable parallel between this case and that which was so lately the subject of trial. From both it appears clear that, respecting the pathological condition and treatment, in certain forms of the disease, surgeons of great eminence may differ, and yet neither party be wrong.]

It appears to us that the great differences of opinion that have arisen among surgeons with regard to the proper mode of treating senile gangrene, depend upon the existence of two distinct forms of that disease. The first of these is, in its onset, essentially inflammatory, being attended with the sudden appearance of redness over the parts about to suffer, and a sensation of burning heat, with pain along the course of the main arteries of the limb, shortly followed by their obliteration by solid coagula. It often appears to be immediately attributable, even when occurring in very aged persons, to circumstances which strongly affect the temperature of the part, or to slight injuries. The form of arteritis, which is its main characteristic, may occur at any period of life from various constitutional causes, among which deterioration of the fluids, consequent

upon organic visceral disease, appears to be the most prevailing. The second type of the disease is more slow in its accession than the first, being unaccompanied by any distinct signs of acute inflammation; it is also attended with more or less deposition of coagulation in the arteries. Its cause appears to be delay or impediment to the arterial circulation of the part it may arise from in great variety of influences, all of which, however, are of an obstructive kind. In both of these forms of gangrene the arteries of the part may have become more or less disorganized by previous disease in their tissues, but cases of either kind may be observed, in which the large arteries are nearly healthy. Still, in the senile form of dry gangrene, the minute arterial branches are always found more or less obstructed by earthy deposit, however free from such change the larger trunks may appear. It seems to have been in the earlier stages of the first type of the disease that Dupuytren, and other surgeons, recommended the use of leeches, &c. in the course of the arteries above the mortifying part, together with general antiphlogistic treatment. When the large arteries have become completely plugged with coagula, and the gangrenous action is confirmed, the symptoms of acute inflammation usually subside, and then it is probably that the continuance of lowering measures is injurious. As in the second form of the disease there is scarcely any evidence of inflammatory action, the gangrene principally depending upon mechanical causes, and there is generally a tendency to prostration of the system, antiphlogistic treatment appears to be altogether inappropriate.—[Ed. Med. Gaz.]

Medical Gazette, May 16, 1845, p. 125.

104.—*On Spontaneous Gangrene.* By T. P. Teale, Esq., F.L.S., Surgeon to the Leeds General Infirmary, &c. [Mary Daybury, aged 27, was admitted May 16th 1845, for gangrene of the left leg. The left foot was black and shrivelled, and the leg, to a definite line a little below the knee, mottled red and violet. On the discoloured portion were several vesications. No pulsation in the left femoral artery; much pain on pressure in its course. She was in a very exhausted state, quite beyond all remedial means, and died in about a fortnight after admission.

On dissection of the vessels in and connected with the affected limb, the left common iliac and external iliac arteries were in their natural condition. At the commencement of the femoral was an annular contraction, as if produced by ligature, and the cavity at this point was completely obliterated. Fibrinous coagula, adherent to the inner coats of the artery, filled the vessel for a few inches below the contracted portion.

The following is taken from the remarks made by Mr. Teale on the case.]

The form of gangrene which you have witnessed in this case, has been variously named senile, dry, sympathetic, and spontaneous gangrene. It was formerly supposed to depend upon a state of de-

bility, more especially as regarded the circulation, and was therefore treated with tonics and stimulants; but the result of this mode of treatment was anything but satisfactory. The first great advance towards a more correct pathology, as well as to a more successful treatment of the affection, was made by M. Dupuytren, who advocated the opinion that the gangrene was dependent upon *inflammation and consequent obstruction of the arteries.*

This view of the subject is advanced by Dupuytren in the third volume of his "Lecons Orales," where he brings forward five cases to establish his opinion.

The morbid condition of the arteries, observed by Dupuytren, undoubtedly performed an important part in the production of the gangrene; but I imagine that this distinguished surgeon has taken only a partial view of the subject, and has overlooked the importance due to a similar obstruction of the venous trunks in the production of gangrene. We know well that if we obliterate an arterial trunk by ligature, the circulation is continued by the collateral vessels, and the vitality of the limb is preserved, provided the veins remain pervious. We also know, that when the large venous trunks are obstructed with fibrine, an œdematous condition, usually named phlegmasia dolens, is produced, but gangrene does not occur if the arteries are able to perform their functions. When, however, from any cause, the arterial and the venous trunks are simultaneously obstructed, gangrene results.

Now, if we refer to the cases of M. Dupuytren, we shall find that, in two of them, no notice whatever is taken of the state of the veins: we are therefore unable to decide, as far as these cases are concerned, upon the condition of the veins; but in the other two cases, it is expressly stated, that the venous trunks, as well as the arterial, were obstructed with coagula; but this fact is passed by without comment by M. Dupuytren. So frequently, however, have I observed this coincidence, that I have been induced to regard *the simultaneous obstruction, both of the arterial and of the venous trunks,* as the essential cause of this form of gangrene. The case which has given rise to these remarks is an additional illustration of the fact.

Although I would thus desire to extend the views of M. Dupuytren, as far as the pathology of this affection is concerned, yet I am unable to do more than to add my humble testimony in favour of the therapeutic principle which he has advocated, namely, the substitution for the tonic and stimulant treatment, formerly in vogue, of a moderate antiphlogistic system, combined with soothing and emollient applications. The value of the treatment, recommended by M. Dupuytren, I have had repeated opportunities of verifying. Frequently have I witnessed, even in aged subjects, most evident and immediate relief of pain from the abstraction of a few ounces of blood, when opiates, stimulants, and tonics had proved unavailing; and by the same treatment I have not unfrequently seen threatened gangrene averted, and existing gangrene arrested in its progress. But I need scarcely tell you, that in adopting this moderate

antiphlogistic treatment, regard must be had to the condition of the patient. If the skin be of somewhat higher temperature than natural, the cheeks flushed, the pulse not deficient in force, although the patient be advanced in years, and apparently much shattered by the disease, the repeated abstraction of small quantities of blood may be employed with safety and advantage; but if the powers of life be flagging, as in the case which you have lately witnessed, we have no alternative but to endeavour, by the use of stimulants and cordials, to prolong life for a brief period.

The pathological principle which I have now been explaining, has an important bearing upon the operation for popliteal aneurism. Few operations are more simple and easy of execution than the application of a ligature on the femoral artery at the part where it is about to pass behind the sartorius; but if you consult the records of surgery, you will be surprised to find, when the free anastomoses of the arteries of the lower extremity are considered, how frequently this operation has failed from the occurrence of gangrene. This is undoubtedly owing to the close proximity of the femoral artery and vein, from which circumstance the coats of the vein are liable to suffer violence during the operation, or they may subsequently become implicated in the inflammation excited in the vicinity of the ligature. From these causes the vein may become obstructed with fibrine, whilst the cavity of the artery is obliterated by ligature, and when both the arterial and venous trunks are obstructed, we have already seen that gangrene is produced.

The knowledge of this fact strongly inculcates the importance of our using the utmost care to avoid doing violence to the vein whilst we are applying a ligature to the artery; and should the parts implicated in the operation hereafter become painful or tense, it is equally important that we should guard against purulent matter being pent up within the wound, by allowing it the opportunity of escaping freely in the course of the ligature.

I have also known gangrene follow the operation for popliteal aneurism from a cause which, I believe, is altogether beyond our control. A few years ago I tied the femoral artery for a popliteal aneurism of unusually large size. The tumor pulsated strongly in every part; its contents were almost entirely fluid, as there had been but little deposition of fibrine. The ligature was applied without the slightest delay or difficulty, and with the least possible disturbance to the surrounding parts. On the following day the tumour was very little reduced in size, but the pulsation had entirely ceased, and the tumor was perfectly consolidated. The patient complained of severe pain in the leg. On the next day the foot was discoloured, and gangrene was evidently commencing. After a few days the foot and half the leg were gangrenous, and I amputated the limb above the knee. On dissecting the amputated part, the principal veins of the leg, as high as the tumor, were all filled with coagulum; above the tumor the femoral vein was pervious and healthy. A section of the tumor showed it to be perfectly consolidated by the deposition of concentric layers of fibrine.

In this case it was evident that the sudden conversion of this large, soft, yielding tumor, into a firm unyielding mass, had caused such a degree of compression of the popliteal vein as to arrest the flow of blood through it, and venous obstruction in addition to the arterial being produced, gangrene resulted.

Provinical Medical and Surgical Journal, June 25, 1845, p. 397.

105.—*New Mode of applying Ligatures in Nævi.* By J. C. Christopher, Esq., London.—The written description of any mechanical performance necessarily makes it appear more or less intricate; nor do diagrams, wherein the tying of knots is depicted, go far to illustrate the same; but any one once witnessing the operation I am about to describe, (performed on a piece of cloth,) would be able, I feel confident, to apply it on the living body.

The operation itself is very simple, requiring only a needle and a piece of waxed silk for its performance; it is very easily executed, and may be divided into two stages—1st, That in which the ligature is passed; 2ndly, That in which the ligature is tightened; and and may be described as follows:—

1st. Take a piece of strong silk, or a ligature, well waxed, and three quarters of a yard in length; thread a curved needle with the same, leaving the ends equal, and pass it, double, under the centre of the part required to be removed; this done, cut the ligature in the middle, leaving the needle attached to the inferior portion; take the same, and pass it through the skin immediately below the part to be strangulated. Thread the needle with the superior portion of the ligature, and pass it through the skin in an opposite direction, immediately above the part to be strangulated. Remove the needle.

2ndly. Tie as tightly as possible the two ends of the loop that includes the inferior half of the tumor, and strangulate that portion of the part to be removed. Tie, in the same manner, the other two ends of the loop, including the superior half of the tumour, and strangulate that portion of the part to be removed. The four ends of the ligature remaining are now to be tied tightly and alternately, the one to the other, and the operation is completed. The whole mass to be removed being thus entirely enclosed in a double circle by the ligature both from within and without, must be effectually strangulated.

Lancet, June 14, 1845, p. 676.

106.—*Injections in Nævus.* By R. S. Davis, Esq., London.—[Mr. Davis has cured several cases of nævi by injection, and considers it in most cases preferable to any other mode. He says,]

I first puncture the nævus with a needle, in four or five directions, making but one puncture through the skin. I then charge Anel's eye-syringe with a saturated solution of alum, insert its pipe into the puncture made by the needle, and inject the nævus until it become somewhat hard and swollen. No other treatment will be required; and after the subcutaneous inflammation has subsided, (occupying a period of ten days or a fortnight,) the nævus will be

observed gradually to diminish, and will in a few months entirely disappear, leaving no scar, nor the slightest disfigurement.

[He has operated twice on one nævus, but thinks it would have been unnecessary, if he had waited. The merit of originating this mode of proceeding is due to the late Mr. Tyrrell. The operation, Mr. D. says, is, so far as his experience goes, entirely free from any dangerous or unpleasant consequences, and if excessive inflammation sets up, an aperient, reduced diet, and cold lotion applied for a day or two, are invariably sufficient to restrain it.]

Lancet, July 19, 1845, *p.* 81.

107—*Arrest of Bleeding in the Hemorrhagic Diathesis by Matico.* By John Hamilton, Esq., Dublin. [This case is one of great interest, and valuable from several circumstances. The subject was a lad of about 4 years of age, who was first brought to Mr Hamilton a year and a half since, for bleeding from the tongue, which had been bitten in a fall. The use of caustic, and pressure for two days had failed in arresting hæmorrhage, and the mother was greatly alarmed, as he had before nearly bled to death from a slight wound about the mouth, and she had lost another boy by a similar oozing from a slight wound of the nose.]

In such a soft, unresisting moveable organ as the tongue, subjected to constant heat, moisture, and suction, the arrest of the hemorrhage offered no small difficulty. I first tried the actual cautery, the prong of a large steel fork applied to the bleeding point, quite red hot. This only caused a momentary stoppage. I then passed a small sewing-needle with a double ligature behind the spot, and tied on each side of it. This was successful for a time; but in an hour or two the child was brought back, bleeding as fast as ever. I recommended the mother to make the child keep a piece of alum in his mouth, continually sucking it. Fortunately he did not object to this, as he was beginning to partake of the alarm in which he saw every body around him, and after an hour or two it effectually arrested the hemorrhage. The child was a long time regaining its strength, or any approach to a natural colour.

[About a year and a half after this, he again bit his tongue, and this time sucking alum failed in arresting the oozing. He was, as before, blanched, and the blood thin and watery.]

I tried pressure with my fingers, with a small piece of fuzzy lint; but the blood soon soaked through the lint. I then took a very small piece of the matico leaf which I happened to have by me, and applied the lower surface over the bleeding point, and kept it there as long as the child would keep the tongue quiet, which was not half a minute. I was delighted to find the blood had ceased to flow, and that contrary to my expectations, the small spangle of matico leaf adhered to the tongue. I kept the little

boy in my study some time; but the hemorrhage did not return, nor did the leaf come off. As I knew, however, this would sooner or later take place, I desired the nurse to re-apply a piece of the same size and in the same manner as she had seen me do.

The next day she brought him to me well. The first piece of matico had fallen off in less than half an hour; but there was then scarcely any appearance of bleeding. She applied a second piece, and the hemorrhage was completely arrested.

Dublin Hospital Gazette, June 15, 1845. *p.* 134.

[Mr. Edward Young, of Winslow, confirms the valuable properties of this substance in arresting hemorrhage from leech bites in children, &c. He has also found great benefit from it in leucorrhœa in the form of an injection, made by boiling an ounce of the leaves in a pint of water for ten minutes. And as an external application to hæmorrhoids, in the form of an ointment, he has found it unsurpassed. He writes thus:]

The first patient on whom I saw the matico tried in this painful affection, had been troubled with large and indurated piles during many months, and which had resisted all the ordinary remedies prescribed. An ointment was prepared, consisting of 3 oz. of the powdered leaves, 3 grs. of opium, and ℥j. of fresh lard, to be applied night and morning. The pain and size of the tumours were much decreased in three days, and by the eighth, they had totally disappeared. Since this satisfactory case, I have witnessed its good effects in repeated instances where a styptic or an astringent were required, and the result has but rarely disappointed my expectations; besides which, in no one case has its internal exhibition or external use been followed by unpleasant consequences.

Ibid, July 1, 1845, *p.* 149.

[Dr. Jeffreys, the introducer of this valuable plant to the general notice of the profession, recommends washing, or holding in the mouth a decoction of matico, in case the hemorrhage should recur in the above case. This mode of curing it he has found successful when every other plan had failed.]

Ibid, July 15, 1845, *p.* 165.

AIR PASSAGES.

108—ON THE TROCHAR AND CANULA IN TRACHEOTOMY.

By Edward Cock, Esq., Assistant Surgeon to Guy's Hospital.

[Of all the operations of surgery, there is perhaps none which proves of less permanent benefit than that of tracheotomy. For it is rare to meet with a case in which it is required, unless from accident or injury, where the amount of disease is not such as to prevent the good effects which would otherwise result.

Mr. Porter, in his work on the diseases of the larynx and trachea, well observes that there is little prospect of ultimate success from this operation in affections of these organs.

Whilst some eminent men condemn the practice as hazardous, and not likely to prove of permanent benefit either to patient or operator, others advocate its use in all cases of obstruction to the free passage of air into the lungs, where it can be done below the seat of mischief. Where opinions are so divided it is usually best to steer a middle course, for cases certainly will occur where its performance will be absolutely required. There are two cases in which the surgeon will be called upon to perform it, in one, with a view to the ultimate benefit of the patient; in the other, merely to relieve immediate urgent symptoms.]

In summing up the chances of a successful issue to tracheotomy, we must not be too sanguine in our expectations, as we are seldom or never called upon to perform it except in the last extremity, when all other remedies have failed in arresting the symptoms.

The cases in which we may most reasonably anticipate success are those in which the affection of the larynx is of recent occurrence, and where we may expect its speedy subsidence, provided we can keep our patient alive for a certain period. Examples of such cases are—1st, acute laryngitis, terminating in effusion in the sub-mucous cellular tissue about the glottis and rima; 2nd, the effects of mechanical injury to the glottis, produced by taking boiling water, mineral acids, or any other irritating fluid, into the mouth; 3d, the introduction and lodgment of foreign bodies within the cavity of the larynx. In all these instances our object is to prolong life and to gain time, in order to allow of the subsidence or removal of the mischief either by nature or by art.

In cases of chronic disease we must always be prepared for much trouble, anxiety, and difficulty; and if the patient finally escapes with life, the recovery must necessarily be tedious. Not only must we await the return of the larynx to a healthy, or, at any rate, to a pervious state, but we shall have to combat the effects of the operation itself, generally supervening in a constitution least able to bear them.

Independently of the popular prejudice naturally entertained against tracheotomy, which must almost always render it available only as a last resource, two objections exist which have hardly received sufficient attention and consideration. The one belongs to the operation itself, the other to the consequences which it entails. The one is the difficulty and embarrassment which the surgeon often experiences in making a prompt, efficient and available opening into the wind-pipe; the other is the almost inevitable bronchitis which ensues from the admission of unwarmed dry air into the lungs.

Those who have practised the operation, or seen it performed, must be well aware of the difficulties to be encountered from the accidental configuration of the parts concerned, the frequent depth of the trachea, the effusion of blood, the constant motion of the

parts, the want of proper assistance, the convulsive action and violent excitement which frequently attend the first incision into the windpipe, the entrance of blood into the air-passages, which may perhaps choke the patient at the very moment that we have succeeded in fulfilling our intentions for his relief. All these, and many other casualties must be anticipated and provided for.

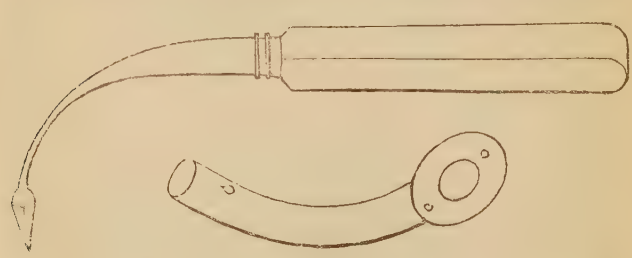
The length of time which is required for the ordinary operation of tracheotomy, and the difficulties to be overcome, must always be a great objection to its success, and not unfrequently form an insurmountable obstacle to its success.

[In the directions usually laid down for opening the trachea, a good light is required, plenty of assistance, and considerable time for its performance. But the surgeon may be called upon in the middle of the night, without any of the former requisites, and at a moment's notice to perform it. Is it wonderful, then, that it should be avoided, or postponed till too late to be of service.

Mr. Cock recommends a trochar and canula for the operation, as as shown in the accompanying wood cut, and says,]

Experience has taught me that the operation may be rendered much more simple, and many of its difficulties and embarrassments avoided, by making use of the trochar and canula, instead of opening the trachea with the knife. The plan I have been led to adopt is to cut boldly and fearlessly down until the trachea is laid bare, and can be felt distinctly under the finger; the trochar may then be introduced without much difficulty.

The principal advantages of using this instrument are the saving of time, and consequent saving of blood (which in a child, is of great importance), and the opportunity afforded of easily checking the hæmorrhage by pressure. The object is gained of at once placing our patient in a state of safety, and the canula may be subsequently



removed at an earlier or later period, as soon as its presence becomes inconvenient. We may then, under more favourable circumstances, enlarge the opening into the windpipe to any desirable extent; thus affording a free passage for the admission of air and the expectoration of mucus. It is no slight recommendation to the use of this instrument that it enables the operator to effect his purpose

without much assistance from others. In more than one instance I have opened the trachea at night with the aid of a single person to hold the candle. The curved trochar which I have here figured is the one which, after several trials with different instruments on the dead subject, I found best adapted for the purpose of tracheotomy.

The second objection and drawback to the ultimate success of the operation, viz., the supervention of bronchitis, or the persistence and aggravation of that which may already exist, is not so easily overcome. It will always prove most troublesome, and not unfrequently fatal, whenever the state of the larynx for which the operation was performed involves the necessity for maintaining the artificial opening during a lengthened period.

[Cases are given where this mode was adopted, from which we select the following of laryngeal obstruction, caused by boiling water taken into the mouth.]

Redmond Prenderwell, æt. 5, a fine fat healthy boy, admitted into Esther, Feb. 14, five o'clock, P. M.

About an hour and a half previous to his admission he had sucked boiling water from the spout of a kettle. Symptoms of inflammation about the glottis rapidly set in, respiration became difficult, and when I was first called to him, about two hours and a half after the injury, he was completely asphyxiated, and in a state of suffocation. His face was swollen and livid; his eyes projecting, and a frothy mucus covered his mouth. His struggles had ceased, and he breathed slowly, evidently receiving scarcely any air into his chest. There was some little delay in procuring the instruments, and before I could commence the incision his attempts at respiration had entirely ceased. The introduction of the knife was immediately followed by a most profuse venous hæmorrhage, which flowed over both sides of the neck into the bed, and at once obscured all the parts. The child's neck was short and fat, the trachea small and deeply seated; and before I could at all reach the tube so as to feel it with my finger, some ounces of blood had been lost. Laying bare the windpipe as well as the untoward circumstances would admit of, I passed in the trochar and canula, but on withdrawing the former, found to my mortification that not the slightest ingress of air took place. Imagining at the moment that I might possibly have missed the trachea, or that the canula might have become accidentally obstructed, I withdrew the instrument and reinstated it, but with the same result. The true cause of failure, however depended on the fact that the child was no longer capable of the effort of respiration, for on applying my mouth to the tube, I inflated the lungs with great ease. This was repeated a few times, when the child began to show symptoms of revival, and commenced breathing by natural efforts.

The hæmorrhage was easily checked by some lint applied round the canula, and by approximating the edges of the wound. The child continued to breathe well and easily through the tube, and had no difficulty in taking nourishment and some stimulus. The

back part of the tongue and the fauces appeared to be scalded, but by no means severely. In all probability none of the boiling water had been swallowed, and the local injury certainly appeared very slight, compared with rapid mischievous effects produced by it.

A few doses of calomel and ipecacuanha were given, the bowels freely acted upon, and the canula was left in the wound until the morning of the 16th, when it began to be choked up with mucus, and was removed. Respiration up to this time had been carried on entirely through the tube, but after its removal, the child breathed partly through the mouth, and partly through the opening left in the trachea. In a few hours it began to respire entirely by the mouth, although for a few days mucus continued to be expelled at intervals through the wound. This soon ceased, and the wound rapidly contracted and granulated. Left the hospital quite well March 13.

[This illustrates the speedy manner in which entrance can be effected into the trachea by means of a trocar, and likewise the ease with which respiration can be artificially carried on by a canula, when such is necessary.

In four instances, Mr. C. has operated with scarcely any expectation of producing more than an arrest of the horrible and distressing struggles of impending suffocation, and always with success.]

Medical Gazette, May 9, 1845, *p.* 52.

[In another case, in which a sixpence escaped into the larynx, tracheotomy was to have been performed, but was rendered unnecessary by the patient coughing up the coin into the mouth when asleep.]

Of this curious fact Mr. Cook says, "It is perhaps worthy of remark, and not destitute of practical interest, that the foreign body, which had retained its position during the most violent expiratory efforts, should at length be ejected at a period when the muscles of the glottis were probably in a state of quietude, and being taken unawares allowed its expulsion under a gentle act of coughing."]

Ibid, July 25, 1845, *p.* 555.

109.—*Operation of Laryngotomy.* By W. Lawrence, Esq., F.R.S. &c. -[Mr. Lawrence was sent for in consultation to a patient in an enfeebled state, breathing with difficulty, and suffering paroxysms of dyspnœa which threatened suffocation. As the case was urgent, an artificial opening was without loss of time made into the larynx. The patient died a few hours after, and the disease was found to extend through the trachea and bronchial tubes. Under the circumstances, no time could be spared to explore the chest. Mr. L. thus describes the operation:]

With the fore-finger of the left hand, I readily felt the corresponding margins of the thyroid and cricoid cartilages, and resting the point of the finger in the interval, I used it as a guide, carrying a double-edged knife at once through the integuments and crico-

thyroid membrane, into the cavity of the larynx. A curved silver tube was then immediately introduced, and filled the opening. The operation was effected with the greatest ease, in much shorter time than I have taken in the description—indeed, it was momentary.

Some shreds of fibrinous matter and frothy mucus, forced into the tube, were easily removed, and the patient was somewhat more comfortable. For some time she breathed more easily; but towards midnight, the breathing, accompanied by a tracheal rattle, became gradually embarrassed; a copious watery secretion flowed through the tube. She sank without undergoing any sudden change, and died about 7 A.M. on the morning of the 15th.

The body was examined eight hours after death, and the morbid parts are on the table for your inspection.

You will observe that the mucous membrane of the glottis, fauces and upper part of the pharynx displays increased redness, being at the same time thickened and roughened on the surface. The epiglottis is stiff and erect, its mucous membrane being thickened and very red. The pharynx healthy.

The mucous membrane below the chordæ vocales, and throughout the trachea, is slightly thickened, reddened, covered by an adventitious layer of soft yellowish substance, constituting a complete lining of the entire tube, equal in thickness to the mucous membrane, and adhering slightly to it. This adventitious lining passes into the left bronchus and its branches, extending uninterruptedly to their minutest ramifications throughout the whole left lung. Mr. Coote has carefully traced some of the tubes to their minuter divisions as far as practicable, and you may thus see that they possess throughout the same delicate but complete lining which is more obvious in the larger ramifications. He has also drawn out from the smaller bronchi some of these tubes, and introduced bristles, so as to show that they form a chain of canals equally perfect with the mucous lining of the air passages. This exudation has been examined microscopically by Mr. Coote, who finds that it consists of pure fibrine; a few mucous globules, and epithelial scales, adhere to the surface, which had been attached to the mucous membrane.

[Had the disease been merely in the larynx the patient might have recovered, but plastic tracheitis and bronchitis, which had not been suspected during life, were also present. As the left lung was almost, if not quite, unavailable for respiration, while the bronchial membrane was inflamed throughout the right, the breathing might have been expected to be much more difficult than it actually was.

The amount of mischief effected in the time is surprising; the serious symptoms not being of more than two days date, while they had become urgent only 24 hours before death.]

In the 27th volume of the Medico-Chirurgical Transactions, Dr. Reid has related "Two cases of tubular expectoration from the bronchi in the adult." The affection in both these cases was chronic, and apparently of limited extent. Ramified tubular portions of the

adventitious bronchial lining were expectorated from time to time, and the patients recovered. An acute case is shortly mentioned; that of a woman admitted into Guy's Hospital, with severe bronchitis. Anomalous symptoms supervened, which could not be explained. After death the whole of the bronchial tubes were found to be filled with the tubular substance, as were the trachea and larynx.

The operation of laryngotomy, as performed upon this patient, is, in my opinion, the preferable mode of making an opening into the air tube, when the rima glottidis is obstructed. The coverings of the larynx in this situation are thin, so that the part to be opened is near the surface, and readily accessible. If the opening be made, as it was in this case, by a single cut, or rather puncture, and the tube be then immediately introduced, there is no fear of inconvenience from bleeding. The larynx has been removed with a portion of integuments, to shew you with what a trifling wound the object may be accomplished, and that the interval of the cartilages in this situation allows of an opening amply sufficient for respiration. The tube should be flattened transversely, with an opening of elliptical figure.

The operation of tracheotomy during life is not so easy as it appears upon the dead subject. The difficulty of breathing is increased when the head and neck are thrown back into a position favourable for the operation, which indeed the patient cannot support. The rapid movements of the air tube in hurried breathing, the hæmorrhage from the thyroid veins, and the greater depth from the surface of the part to be opened, are sources of still more serious difficulty, especially in children.

Further, the introduction and management of the tube are by no means so easy as in laryngotomy.

Medical Gazette, June 20, 1845, *p.* 307.

110.—*Tracheotomy in Laryngitis.* By W. Chapman, Esq., Norwood.—[In a case of acute laryngitis reported by Mr. Chapman, the patient had had slight cough for two days, and was awoke at four o'clock in the morning by sudden and great difficulty of breathing.

The disease increased during the day, and at ten o'clock at night, Mr. Chapman saw her. The symptoms then were, orthopnœa, quick and laborious respiration, dry cough, with an acute croup-like inspiration; great anxiety of countenance; heat of skin; intense thirst; and rapid pulse. Pressure on the larynx caused pain; there was a feeling of constriction of the throat, and a sense of partial suffocation. Twenty-four leeches were applied to the region of the larynx; half a grain of tartarized antimony in solution was given every hour; and three grains of calomel with a half of opium, every three hours.]

On the morning of the 21st of February, she was much worse; all her previous symptoms had returned during the night. Her difficulty of breathing was very great; there was some vertigo; her extremities were becoming cold; her pulse thready; and she ex-

pressed her firm conviction that if not shortly relieved from her distress she should soon die. I quite coincided in my patient's opinion, and thinking it unjustifiable to spend more time in the trial of remedies, as soon as possible I performed the operation of tracheotomy, by making an incision, of about half an inch in length, down to the trachea, just one inch above the sternum, and then passing in the tracheotomy trocar and canula, There was a little hæmorrhage from the integuments, but it soon ceased. (before the trachea was opened,) and a small quantity of frothy blood, which issued at first from the opening in the trachea, almost instantly stopped. The relief afforded by the operation was most marked; after recovering from its immediate effects, her breathing became perfectly calm and easy; her anxiety and distress of countenance, with the dread of suffocation, vanished; the pulse increased in power and volume, and she expressed herself as feeling "in heaven." From this moment she continued to improve, without an unfavourable symptom.

On the 24th the tube was removed from the trachea; the opening, however, remained pervious for a period of from seven to ten days from the time it was made; it then gradually closed entirely. The gums became affected by the mercury, and were kept tender. If, during three or four days after the operation, the free ingress of air to the lungs was prevented, by my finger being placed unobservedly over the tube or opening, the patient immediately became aware of what was being done, and complained of difficulty of breathing; but day by day the respiration improved when the opening was temporarily closed, until it became quite natural. Mrs. M—— quite recovered.

This, like many other cases of a similar kind, shows how very soon laryngitis subsides when the passage of air over the inflamed surface is obviated, and free breathing is permitted by an opening below; and how desirable it is to afford that relief *early*, and before the general powers have suffered greatly by the continuance of distress.

Lancet, June 7, 1845, *p.* 645.

111.—OPERATION OF TRACHEOTOMY.

By. Dr. Hall.

The subject of this case was an interesting lad of about four years of age. While playing with a piece of pipe stem, and drawing air through it, holding it between his lips, he accidentally sucked it through the rima-glottidis into the trachea. This account the boy gave immediately after the accident, for no one was present at the time. He also measured on his finger his estimate of the length of the pipe stem, corresponding, as it afterwards proved, with its real length, being nearly $1\frac{3}{4}$ inches. The usual symptoms of a foreign body in the trachea at once came on, such as violent coughing, and difficult respiration; but the little fellow was

not attacked with that threatened fatal suffocation which follows the inhaling of smaller and lighter substances—and there appeared no floating up and down of the body through the windpipe, in the action of breathing; it seemed to have descended rather by its own superior weight, and become fast in some bronchial tube. But lest there might be some mistake in the opinion we had formed and expressed—viz., that the pipe stem was in the trachea or bronchi, we resorted to other means than an immediate incision, to dislodge the offending cause. A probang was several times introduced into the pharynx and œsophagus, and an emetic of sang. canaden. was administered, with the vain hope that the body might be coughed up in the operation. To the horrid proposal of cutting the boy's throat to save his life, his friends hesitated much in yielding consent, and they were induced to try still further milder means to expel the foreign body before they would consent to this savage operation. Consequently we left the patient for the night; in the meantime the lad was several times held up by his ankles with his head downwards, at the same time applying sudden percussion between the shoulders; but all to no purpose.

The next morning, about eighteen hours from the accident, leave was obtained for the operation. This was performed by placing the boy upon a table on his back; his head, arms, and legs were held and supported by assistants. The lad being short-necked and fat, it became expedient to introduce a bolster beneath the nape of the neck and shoulders, so as to bear the head back, and raise the trachea, to make room for the knife. These preliminaries being settled, I commenced the incision from above, and carried it longitudinally downwards, in the course of the trachea to the sternum. While cutting through the adipose substance, a vein of considerable size was divided; and this continuing to bleed, to save time we applied a ligature. The tracheal opening was now made at the upper angle of the incision, when the air and spray burst forcibly out; the boy, up to this time, incessantly screaming and inquiring if we had found the pipe stem; but now his voice was, as it were, smothered and gone. At this critical juncture, he was turned on his left side to prevent the oozing of the blood into the trachea, and the incision was finished by dividing the tracheal rings, with the probe-pointed bistoury, to the extent of the external incision, it being about 2½ inches. The cut edges of the trachea were drawn apart with broad blunt hooks, made of silver plate, and immediate search was made for the foreign body.

After nearly ten minutes' search it was found by Dr. Marsh, and drawn out on the point of the probe, this having entered the hollow of the pipe stem, which was found securely lodged in one of the right bronchial tubes, some two or three inches below the top of the sternum.

After this joyful result, the incision was drawn together by sutures and sticking plaster, but the respiration had become so aborious and difficult before the operation, that now at each

expiration the air burst forcibly out between the stitches. This continued about 36 hours, when the breathing became natural.

The first evening a cathartic of calomel was administered, followed by an expectorant powder, one every six hours. In three days the little sufferer was considered out of danger, and has since entirely recovered.—*Montreal Medical Gazette*, 1844.

Medical Gazette, June 13, 1845, *p.* 305.

112.—*Tracheotomy.*—When the operation of tracheotomy is to be performed, you will find things in a different condition from what you might suppose from performing it on the dead subject. It is all very well to say, throw the head back, and give yourself room; but you cannot put your patient into the position you would wish, on account of the difficulty of breathing; it is so great that he cannot bear such a position an instant, and that in which you find him is generally a bad one, for he is leaning forwards; and you must put up with the inconvenience.—*Professor Colles' Lectures.*

Medical Gazette, Aug. 29, 1845, *p.* 752.

113.—CASES OF SPONTANEOUS EXPULSION OF FOREIGN BODIES FROM THE AIR PASSAGES.

By James Duncan, Esq., M.D., &c.

[The notes of the following interesting case were communicated to Dr. Duncan by Dr. Spence, of Berwick. Mr. R. æt. 42; in February, 1841, while at dinner, let a piece of bone slip into the trachea. Violent coughing and dispnœa followed; a sharp pain was also felt a little below the left clavicle, and some bloody mucus was expectorated. A troublesome cough, increased by exposure, continued; bloody mucus was expectorated, and the patient was unable to lie on the left side. The symptoms increased, and in the winter of 1845, came to Edinburgh for consultation.]

On the 2nd of March, 1845, he was seized with a violent fit of coughing, and a small piece of bone was discharged. The paroxysm still continued, and in about half an hour a still larger piece was ejected. The larger piece was of a very perfect rhomboidal figure, the diagonal between the two very acute angles measuring one inch, that between the obtuse angles three quarters of an inch. The smaller piece was three quarters of an inch in length, and three lines in breadth, and somewhat curved. From this time the symptoms improved; he began to rest well at night, and could sleep on either side with ease, but the cough still continued for some time troublesome during the day, and considerable quantities of muco-puriform fluid were expectorated. He still for a time felt the pain on the left side, but his strength and the general state of his health continued to improve. He is now, June, 1845, perfectly recovered.

This case is remarkable from the length of time which the foreign body remained impacted in the air-passages, without producing fatal consequences, and for the complete recovery which followed

its ejection. In the majority of the recorded cases of this description, in which the accident did not prove fatal, by inducing immediate suffocation, it has done so when not removed by surgical interference, either by exciting extensive bronchitis or pneumonia, under which the patient sank rapidly, or these have passed into a chronic state, and the patient has perished at a later period. Cases, however, are not wanting in which, as in the present instance, the foreign body has been expelled by the efforts of nature, and the patient has recovered: but I am not aware of any in which this fortunate result has followed at such a distant period from the date of the accident.

A case of spontaneous expulsion and subsequent recovery is given by Mr. Plant, in the Dublin Hospital Reports.

A piece of wood had passed into the trachea, and at first had lodged in the right bronchus. At the end of four weeks, during which time the boy had suffered much from troublesome cough, it was thrown up from the bronchus into the trachea, where it could be detected moving up and down. As there appeared to be no particular danger, Mr. Plant, trusting that, as it had been thrown up from its first situation, it might also be ejected from the trachea, deferred operating. At the end of the fifth week it was so, and the boy recovered.

Another case of this nature is given by Stalpart Vander Wiel. A small piece of bone passed into the trachea of a girl while she was engaged in supping bouillon. The symptoms were constant cough, fever, and ultimately hæmoptysis, with purulent expectoration. At the end of four months the bone was coughed up, and the girl recovered.

Mr. Howship relates a case in which a nail passed into the trachea of a man aged 65. The accident occurred on the 15th of August; severe pulmonary symptoms followed, and the man was given up by the faculty, but the nail was discharged on the 12th November, the patient recovered, and was alive twelve years afterwards, though subject to frequent pulmonary affections.

In a case given by Dr. Lettsom, the covering of a button remained in the air passages for eight months, when it was coughed up, and the pulmonary symptoms subsided.

The admission of an ear of grass into the air-passages appears not to be an uncommon accident, and almost invariably gives rise to very distressing symptoms.

Dr. Donaldson, of Ayr, relates one of this description, in which the grass remained in the right bronchus for seven weeks, giving rise to intense bronchitis; it was then expectorated, and the patient recovered. The references to several of the above cases and some others are given in a paper in Dr. Craigie's Journal, published some twelve years back.

The following case bears a striking resemblance to that related by Dr. Donaldson, but it is still more remarkable from the length of time which the ear of grass remained in the air-passages. The patient was under the care of my friend, Dr. Pitcairn, for whom I

repeatedly saw him while supposed to be labouring under intense and general bronchitis, and he has kindly furnished me with the notes.

W. W., æt. 5½, on recovering from a severe attack of pertussis, in 1840, was sent to the country for a change of air. During the month of July, while in the fields, he had been chewing a head of grass. At the time he was seized with a fit of coughing, and during the hoop, the grass was carried into the trachea. The child did not tell the servant who was with him what had happened. Shortly after this occurred, he had an acute attack of bronchitis, for which he was very actively treated. He never thoroughly recovered this attack, but after the acute symptoms were subdued, was constantly affected with rapidity of breathing, harrassing cough, and purulent expectoration, with occasional streaks of blood. Emaciation succeeded, and hectic symptoms were supervening, when one evening, in the beginning of May, 1842, 22 months after the accident, during a very violent fit of coughing, the ear of grass was expectorated, enveloped in a mass of thick and fetid pus, with some blood. After it was washed, and discovered to be a piece of grass, the boy then told how it had got there. From that time, all the urgent symptoms diminished in severity, and by degrees he perfectly recovered.

On examination, the piece of grass rejected turns out to be an entire ear of the crested dog's tail grass (cynosurus cristatus) of an ordinary size, or about an inch in length.

In neither of these cases, I believe, could any indication as to the presence of the foreign body have been derived from auscultation at the period after the accident at which they came under medical treatment, as in both bronchitis had supervened, and even had the nature of the accident been known at first, I doubt much if any would have been afforded.

In the first, however, I believe the history of the accident alone, had it been known, would have been sufficient to warrant an operation, although, in all probability, it would have proved ineffectual, from the fact that two fragments had gained admission at the same time: however, it is very possible that the second fragment might have escaped by the opening at an after period, as has occurred in several instances in which the operation has been performed, and in which its removal at the time had been found impracticable.

Northern Journal of Medicine, Aug. 1845, *p.* 134.

ALIMENTARY CANAL.

114.—ON DISEASES OF THE TONGUE.

By W. Lawrence, Esq., F.R.S., &c.

[As actual disease of the tongue is often obscure, and seldom met with in private practice, attention to the following remarks taken

from a lecture by Mr. Lawrence on the subject, will be of service when such do occur.

Ulceration, swelling, and thickening of the mucous membrane, and hypertrophy with induration of the whole organ, are the forms most frequently met with. With the two latter ulceration is a frequent concomitant. Syphilis and cancer are the more formidable diseases, the first being by far the most frequent. Serious affections too, occasionally depend upon disorder of the digestive organs.]

Syphilitic disease of the tongue occurs most frequently in conjunction with other venereal symptoms, such as ulcerations of the fauces or mouth, and eruptions, particularly of the scaly kind. Here the nature of the malady is too obvious to be mistaken.

A gentleman who had had a primary syphilitic sore some weeks previously, showed me an ulcer on the right edge of the tongue, very similar to those frequently accompanying the use of mercury. The surface was raised and irregular, excoriated, and partially ulcerated. There were two small superficial ulcerations of the palate, and no other symptom. These appearances were entirely removed in three weeks under the mild use of mercury with sarsaparilla.

A female, at present in the hospital, has the mucous membrane at the edge of the tongue thickened, and considerably raised, for a length of three quarters of an inch, with alteration of the epithelium, giving it a white colour. It has been in this state, with considerable soreness, for three months. I lately saw a young person with thickening of the mucous membrane on both sides of the tongue, occupying nearly the whole length of the organ. It was reddened, slightly fissured, but not greatly enlarged. There was a superficial ulcer, of elongated form, on each side, about the middle of the diseased portion of the membrane. This affection, which had followed a primary sore, and was not attended with any other secondary symptom, was said to have existed in a more or less troublesome state for more than a year. I prescribed the hydrarg. c. cretâ, and conclude that it had the desired effect, as I have not seen the patient since.

A gentleman 26 years of age, consulted me on account of an affection of the tongue. There was a thickening of the mucous membrane on the middle line and at the back of the organ, constituting a flattened projection of circular form larger than a sixpence. It was redder than the rest of the mucous membrane, and had a slightly broken surface like that of a wart. It was painful, and smarted when acids, strong liquids, or stimulating condiments, were taken into the mouth. As he mentioned that he had felt some uneasiness about the throat, I inspected the fauces, and found a superficial ulcer, the size of a sixpence, on the side of the pharynx, behind the root of the tongue. I asked whether he had contracted any syphilitic complaint: he was surprised at the inquiry, but informed me that he had had a chancre several weeks previously, which had healed in ten days under the use of mercury. The

tongue and throat soon became well under the use of that remedy.

Sometimes the dorsum of the tongue presents red patches, in which the mucous membrane is denuded of its epithelium, and perfectly smooth, but not ulcerated. These are sore when hot or strong things are taken into the mouth. They may last for a considerable time, particularly if they are neglected, getting better and worse.

There is sometimes a combination of diseased appearances in the same case. A gentleman consulted me on July 1st. There had been a primary sore ten months ago; then an eruption, which did not last long. He had been plagued with a bad tongue for the last four or five months: it had been so swelled and painful that he ate with difficulty. The surface of the organ, in its middle portion, and over more than half its extent, the dorsum and edges being included, was smooth, the epithelium being white and opaque, as if this part had been ulcerated, and partly having a raw appearance. There were three or four small superficial ulcers with grey surface at the edges and tip, and small superficial ulcerations of the lips, with chaps at the angles of the mouth. In both palms there were scaly eruptions in a slight form, but not elsewhere. This patient had frequently taken the iodide of potassium in rather large doses; the tongue would get better, but the mischief would return on leaving off the remedy. I prescribed the hydrarg. c. certâ, gr. iiss. three times a day. The patient did not visit me again for a week, at the end of which time severe ptyalism had been produced, with more than the usual degree of suffering. He expressed his belief, however, that the original complaint of the tongue was better. Now (August) that the mercurial affection has subsided, the tongue is quite well, though having marks on its surface of the previous disease.

The beneficial influence of mercury on ulcers of the tongue, mouth, and throat, has always appeared to me to afford the most unequivocal evidence of its peculiar antisyphilitic virtues; for while the sound mucous membrane is inflamed and ulcerated by the action of the remedy, we see the contiguous venereal ulceration altered in character and healing rapidly.

[After describing a remarkable case of enlargement and induration of the tongue, he gives the following still more striking case. He has usually found it subdued without difficulty by the use of mercury.]

Between three and four years ago, I saw a still more striking instance in a gentleman, under 30 years of age, who had been previously, though at a considerable distance of time, under my care for primary syphilis. He had been travelling on the continent for a year, and had experienced during the whole time great pain and inconvenience from a disease of the tongue, which had begun in a slight form as he was leaving England. He had consulted surgeons and physicians in France and Italy, and had taken various medi-

cines without any benefit: among them was arsenic, probably given on the supposition of the complaint being cancerous. On returning to England, he begged me to arrange a consultation with two of my surgical brethren, being much alarmed at his situation. We found the tongue somewhat indurated and generally enlarged, so as to interfere with mastication, and render articulation very indistinct. The mucous membrane was thickened, and the surface irregular. There were no other symptoms. As this gentleman feared the effects of mercury internally administered, the hydrarg. c. cretà was prescribed in three grain doses. After taking about half a dozen, the bowels were much disordered, and I therefore resorted to friction. In this form the remedy agreed perfectly well, and it was followed up for several weeks. As soon as the mouth was affected, the tongue began to improve, and it had entirely recovered before the remedy was discontinued. There has been no relapse of the complaint, nor any other manifestation of disease.

A few weeks ago, I saw a patient from the country who had come to London under considerable alarm on account of a swelling of the tongue. It was confined to one side, and the posterior half of the organ, occupying the substance, while the mucous membrane was unaffected. There was an ulcer in front of the swollen part. The history, and the existing symptoms, clearly showed the syphilitic nature of the affection.

I was consulted in the month of June, by a gentleman, 25 years of age, in whom the right half of the tongue was enlarged so considerably as to impede articulation, the swelling beginning at the back and extending nearly to the apex; it was also indurated, but less so than in scirrhus. The morbid change embraced both the mucous membrane and the muscular substance, extending nearly throughout the entire thickness of the organ. The surface was red and slightly tuberculated, presenting three or four superficial ulcerations on the more prominent points. In front of the indurated mass, and near to the apex of the organ, there was a separate lump, the size of a horsebean, with a small ulcer on the surface. The disease extended to the middle line of the tongue; the very margin of the organ, constituting the outward boundary of the enlargement, was healthy. There was no other affection of the mouth or throat. From the circumstances now mentioned, I concluded the disease to be syphilitic, and the history of the affection made the point clear enough. There had been a primary sore on the penis in October 1840; it was treated with mercury, and got well in two or three weeks. The patient, having been perfectly well in the interval, having married and had healthy children, caught cold last Christmas. The throat and tongue became sore, the latter being ulcerated, so that smarting was experienced when salt, pepper, &c, came in contact with the part. Nitrate of silver was applied at this time, and the patient ascribes the swelling, which did not exist previously, to the application. The swelling has increased lately. There were some doubtful appearances on the face and chest, but not enough to constitute a regular eruption. I recommended a

course of mercury. The mouth had become considerably affected in a fortnight, and there was decided improvement in the state of the tongue. I am not acquainted with the subsequent progress of the case.

Venereal enlargement and induration of the tongue may be confounded with cancer, in which the substance of the organ is also more or less hardened. There are several and sufficient points of distinction, so that, if the history be investigated, and the symptoms carefully examined, there will be no risk of mistaking the comparatively mild and manageable venereal affection for the very painful, and I fear, inevitably fatal cancerous disease.

I have always seen the latter begin on the edge of the tongue, generally at the middle or back part. It extends slowly into the substance, and may ultimately embrace the greater portion, or the whole organ. The hardness which, as in the scirrhous breast, is in the highest degree, renders the part incompressible; it is accurately circumscribed, so that we immediately feel the boundary of the disease. The hardness is less marked in syphilis, more diffused, and not confined in its origin to the margin of the tongue.

Scirrhous induration does not last long, nor become considerable in extent, without the occurrence of ulceration; while syphilitic enlargement may occupy one-half, or nearly the whole organ, without breach of surface.

The cancerous ulcer is deep, often with an ash-coloured or partially disorganized and bleeding surface. Sometimes profuse and alarming hæmorrhage occurs. The margin is hard, raised, and everted, or ragged and excavated. The induration is considerable in proportion to the ulceration, especially at the commencement. The secretion from the sore is thin and offensive. The induration, in syphilitic ulcerations, is comparatively inconsiderable; the surface is of better character, and the ulcer seldom penetrates deeply.

Cancer of the tongue is a hardened mass, which becomes ulcerated; syphilitic disease is an ulceration of which the base and edge are sometimes thickened, moderately indurated, and raised.

The pain of cancerous ulceration is most severe, and so much aggravated by motion of the organ, that articulation, mastication, and swallowing, are attended with the greatest suffering. The aid of opium is absolutely necessary to procure temporary ease. The uneasiness in syphilitic cases is comparatively inconsiderable.

The absorbent glands soon become enlarged and indurated in cancer of the tongue, while they seldom suffer in syphilitic ulceration; if they do, it is simple enlargement.

Medical Gazette, August 22, 1845, *p.* 703.

115.—ON THE OPERATION FOR CLEFT PALATE.

By Professor Dieffenbach.

(*Translated from the German, for the Dublin Journal of Medical Science.*)

The principal object of the operation is to improve the speech; any defect or split in the palate, whether in the margin or on the

middle of it, as well as when there is an aperture in the hard palate, causes an impediment in the speech, and a particular snuffling, inharmonious sound. When the defects or splits are greater, and stretch over the whole palate, the speech becomes entirely unintelligible, and the sound of the voice a continual unmodulated noise, a guttering hissing through the throat and nasal fossa; and when the cavities of the mouth and nose are not separated, there is, in speaking, a continued and free emission of the breath. The second inconvenience connected with the division of the palate is the difficulty of swallowing food, especially liquids, which frequently escape upwards through the nose. In the case of double hare-lip (*Hasenscharte* and *Wolfsrachen*), with projection of the inter-maxillary bone in the shape of a truncated knob, there is, on account of the separation of the superior maxillary bones and the palate bone, a deep slit dividing the palate and uvula, which forms both its ends, as the extreme points of the cleft. This is the highest degree of this congenital defect which is connected with hare-lip; but sometimes it occurs without any division of the lip.

Observation shews us the following degrees: the least is where the uvula (*Zäpfchen*) is altogether or partially divided, or where the slit extends more or less into the soft palate, so that it is cleft one-half or more, or altogether, as far as the palate bone. If it extends further, the palate bones are separated posteriorly either partially or altogether, or even to the edge of the alveoli; and the lip is either entire or is singly or doubly divided, on one side, together with the bones of that side, while on the other a slit exists in the lip, unattended by separation of the alveoli.

Another direction of this deformity is where it is turned outwards; the lip is divided either like a single or double hare-lip, or the slit extends to the alveolar process on one or both sides, and then approaches the place where the inter-maxillary bone joins the upper middle jaw bone (*Oberkeifer der Mitte*); and the palate bones are separated anteriorly to the extent of one-half or even altogether.

The velum is here sometimes perfect, and sometimes more or less divided, until we again arrive at the highest degree in that direction.

A third form of separation is where it begins both in front and behind behind; with a division of the uvula, and in front with either single or double hare-lip. In the higher degree the slit penetrates backwards into the palate, and in front into the upper jaw and palate bones; and lastly, the slit is still greater, and there remains in the middle of the palate only a small bridge of bone. Sometimes the posterior slit is disproportionately long, or the slit in the palate particularly large, and then that of the lip is small; or the reverse takes place.

All clefts in the lips or palate that have come under my observation belong to one or other of these forms.

The following are the instruments used in stitching the palate: 1, a small fine hook, such as is used in the operation for squint; 2,

a small, narrow-pointed knife, with an octagonal handle; 3, a long, narrow forceps, with toothed extremities; 4, a straight, feather-spring palate pliers, provided at its distal extremity with a thick, furrowed, button end; 5, palate needles and lead wire; the first are half an inch long, flattened, and three-cornered at one end; and at the other, round, hollow, and internally provided with a screw, into which the wire can be fixed: the wire must be of pure lead, and new drawn, for old wire is very brittle; 6, a corn forceps, (*Kornzange*); 7, a pair of plain curved scissors; and 8, for the closing of small holes in the palate, a small eared hook, and thread-like lead wire.

I. OPERATION FOR CLEFT OF THE SOFT PALATE.

At this operation the patient sits opposite the window, the head being supported by an assistant; he then opens his mouth, draws in his breath, and puts down his tongue.

1. *Incision of the Edges.*—The edge of the cleft palate is seized in the middle by putting the hook through it from within outwards; the knife is then pushed through near the hook, and drawing it with a sawing motion upwards and forwards, a strip about the breadth of a straw is removed; the knife is then turned downwards, and the lower part cut off, pulling it away with the hook. The same is done at the other side. The patient is then allowed a little rest, and to wash his mouth with cold water; but he must not gargle, as the palate is too much irritated by it.

2. *The Insertion and Closure of the Fastenings.*—If the cleft extends over the whole palate, four or five fastenings are required. The needle is first put in the holder, so that the rounded end fits closely in the furrow, while the point projects in a proper manner. The instrument (needle), thus armed, is passed through the cleft, first in the upper part, and the palate pierced through about three lines from its edge, from within outwards, on one side. When the needle appears sufficiently advanced through the palate, it is laid hold of by the *Kornzange* in the left hand, and loosened by pressing the spring of the needle holder; the needle and the wire are then drawn out of the mouth with the forceps; the second needle is then put in the needle-holder, and, drawing the wire further out, it is also pushed through the cleft, and the palate pierced through on the opposite side, as in the former case, and the needle and wire drawn forward till the centre of the latter comes into the cleft. The ends of the wire, with the needles attached, are then cut off, and the wires twisted together until the edges approach each other a little. This (the twisted ligature) is then turned aside into the corner of the mouth, or the assistant can hold it on the upper part of the cheek. The other three or four sutures are then put in at measured distances, and moderately twisted, by which means the edges are made to approach but not touch each other. The wires are then by degrees twisted more and more, and the coagulated blood of the wound is removed with a small sponge, applied on a forceps; at the tighter twisting together, one side of the wire is

supported close to the palate by the forceps, that the soft part be not torn. If the cleft is near closing, the upper ligature is then cut off with flat bent scissors, about four lines from its insertion, and the double end is twisted closer together with pliers. The same manœuvre is then performed with the other sutures. Before the wires are finally twisted together, a small piece of sponge is pressed into the space between the sutures, in order to clear off the blood. The wires are then twisted more closely together, till the mucous membrane covers the rings, so that they are scarcely seen; the ends of the wires are then again shortened with the scissors, blunted with the pliers, and turned away from the tongue, and the mouth is washed with cold water. This is my mode of treatment of clefts that are not very wide, and whose edges can be joined without much straining; but if the cleft is wide, so that the palate would be over-strained in twisting the wires, the union does not succeed; the stitches would either tear through at once, or ulcerate out in a few days, therefore,—

3, *Side Incisions are necessary.*—One side of the palate is pierced through with a scalpel, half an inch from the edge, and half an inch from the end of the wound; the velum is then cut through upwards in a sawing manner, to the bony palate; another incision is made on the opposite side; the blood generally flows copiously, and the mouth must be washed frequently with cold water. The beneficial effect of these incisions shews itself immediately; the still strained palate hangs down lax, like a damp curtain, and the wounds on the sides appear like two oval clefts, which would admit two fingers. The painful and straining sensation which penetrates into the ears also ceases immediately, and the air passes freely in and out through them.

Side incisions are necessary before the entire closing of the cleft, in the higher and extreme degrees of this defect; and they especially give a possibility of closing after all the wires are put in, a little twisted together, and the original cleft lessened; but if on a second twisting of the wires there still remains a cleft of a finger's breadth, one side is to be pierced, and the palate cut through as near the cheek as possible. A similar incision is made on the other side, the twisting of wires is then to be continued until the cleft is closed, and the ends of the wires are then to be cut off.

[The patient is to be kept in bed, in a sitting posture, and carefully watched by an experienced nurse, to clear away the mucus, which is formed in large quantities from the mouth. Nothing is allowed but water and mucilaginous drinks.]

On the third day the mouth may be washed with lukewarm water, or elder tea, and on the fourth, being assured of its complete adhesion, by probing it with a camel's hair pencil, one suture may be removed. The end of the wire is first turned to one side with forceps, and a piece of the ring which now appears cut out, it is then turned to the other side, and the double twisted end cut off, the remaining portion of the ring may be then removed. On the fifth and sixth days the other sutures may be taken out. Frequently the operation succeeds in uniting the entire cleft.

II. OPERATION FOR PARTIAL OR TOTAL DIVISION OF THE HARD PALATE, WITH EVEN EDGES.

The cleft in the palate is in these cases usually large, and a side incision after the insertion and partial twisting of the sutures, is always necessary. The intention of this operation is to unite the palate, to lessen the cleft in the palate bone by degrees, and at last to close it, and, in the mean time, to put on an obturator, or plate with which the opening is covered.

In cases of very wide cleft in the hard palate, where there is only a rudiment of the soft palate, the closing can be effected by previously lessening the cleft of the palate bone. The edge of each palate bone is pierced through with a strong, straight, three-cornered punch (*Priefuren*), and a thick, soft silver wire put through the opening, the ends of which are twisted together. The mucous membrane is divided near the place where the palate bones join the alveolar processes; a thin, smooth, concave chisel is then put to the bone, and it is cut through on both sides. The wires are then twisted again, till the edges of the bony cleft approach each other a little, or altogether; the first alone can be generally done. The ends of the wire are then cut off. The effect of the closer approximation of the edges of the cleft in the bone is immediately perceptible in the soft palate. The side slits in the bone, which are at first filled up with lint, close themselves by means of copious granulations, according to the usual process. The edges can sometimes be brought still closer by twisting the wire: by the application of the hot iron, or tincture of cantharides, which renders them purulent, and the bony spaces are lessened. When the space in the bone is either closed or diminished so much, that the cleft in the soft palate s considerably lessened, the sewing of the palate may then be undertaken, according to the directions already given, and side incisions made in the soft palate before the sutures are put in.

The rest of the operation, besides the exciting of the granulations on the borders of the bony cleft, consists in the removal of the mucous membrane, and pressing it into the slit; the loosened edge is then pierced with fine leaden sutures, and the place where the skin has been removed is filled up with dry lint.

The sutures, after a few days, generally break through, and the granulations that arise in the place where the skin has been taken off, prevent it from retracting altogether, and a part always remains in the cleft. This operation is to be continued from time to time, until the cleft is removed.

III. TREATMENT OF THE OVER-LARGE OPENINGS OF THE SOFT PALATE.

Very small openings in the soft palate, that either remain after a partially successful stitching, or are caused by penetrating sores, may be closed by exciting inflammation in the borders. For this purpose concentrated Tinct. of Cantharides is the most effectual: Lapis Infernalis causes the loss of a layer of the organized mass, and the process of inflammation that follows produces an insufficient

granulation, so that the hole generally increases in size. The concentrated acids recommended by many surgeons for exciting inflammations, only produce a superficial corrosion of the borders; nor does such a quick granulation follow their use as that of the cantharides.

If the opening is large and oval, and the palate soft, the edges are cut evenly to fit to each other, leaden sutures are then put through the edges with a small eared hook, and twisted.

Dublin Journal of Medical Science, Nov 1845, *p.* 227.

116.—*Operation for Hare-lip in Infants.* M. Paul Dubois brings forward some interesting data respecting the period at which the operation for hare-lip ought to be performed. He does not agree with the generality of surgeons, who think that it should be deferred for several years, or at least several months. He thinks, on the contrary, that great advantages are obtained by performing the operation soon after birth. These views he substantiates by his own practice. In various operations which he has performed, he has merely refreshed the margin of the solution of continuity, and then brought the parts together by means of insect pins and the twisted suture. The wound has always been dressed with the greatest facility, often, indeed, whilst the infant was asleep. The pins were withdrawn on the third or fourth day. Two of M. Dubois's patients swallowed blood; one vomited it; with the other, it followed the course of the intestinal canal, without giving rise to the slightest accident. This circumstance has some importance, as the swallowing of blood by infants has been given as a contra-indication. All the children were fed as before the operation, by means requiring suction—that is, the breast or the feeding boat; so that the early operation cannot be objected to on the plea of its necessitating an abstinence of several days' duration. It has been stated that the cries of the child might derange the dressing, but this objection is likewise unfounded, as it resists the child's cries, as well as suction. The principal advantages of an early operation are the following—the cicatrix is smaller, and more linear; the education of the child becomes much easier; and the anxiety and distress of the parents are calmed.

M. Roux thought that the early operation, although occasionally useful, could not be generalized. He had seen serious accidents follow it. One child was found dead in its bed, another was seized with convulsions, which all but proved fatal. Hare-lip, in his opinion, offered such a great variety of forms, that it was very difficult to lay down a principle applicable to all cases.

Lancet, July 19, 1845, *p.* 63.

117.—ON THE CURE OF CONGENITAL CLEFT PALATE WITHOUT OPERATION.

By C. W. Stearns, Esq., London.

[Mr. Stearns was first induced to turn his attention to the contrivance of an artificial palate plate, by the case of a relation who had from birth been afflicted with fissure of the palate.

The modes of treatment hitherto adopted have been in such cases, either to pare the edges and thus endeavour to promote union, or to apply a gold plate to the roof of the mouth, and so fill the aperture.

But before describing his own invention, and the steps by which he was led to it, Mr. Stearns remarks that congenital fissures of the palate conveniently admit of division into three classes. In the first the fissure extends through the palatine and superior maxillary bones, as far as the alveolar processes, and scarcely admits of union throughout any part of its extent. The second class comprehends those cases in which, though the bones are apparently entire, the concavity of the arch may be somewhat greater than is natural, and there is a small fissure at the posterior margin of the palate. While in the third are enumerated those uncommon cases where the uvula alone may be fissured, or perhaps a third, half, or two thirds the width of the velum on the median line may be wanting. Of course these characters are not constant, one variety frequently running into another, though sufficiently so to enable the class to which any case of deformity belongs to be defined.

The various contrivances are then detailed, which Mr. Stearns employed, but as they have no relation to our present purpose we omit them, and come at once to the perfect instrument. This is principally composed of Indian Rubber, in a new form obtained by a Mr. Goodyeare, which possesses the properties of elasticity to a great degree, resistance to the action of most decomposing agents, and a capability of being moulded to any required shape. Even with this material it was a work requiring great thought and a long time before its construction was perfected.]

The present plan of construction may be best explained by a notice of the steps that have led to it. I first moulded a simple triangular and somewhat concave lamina of the material, of the same shape and size as the fissure. This I attached to the gold roof, so that it would descend obliquely downwards and backwards, until its inferior margin approached within about two lines of the concave surface of the pharynx. This method seemed to produce a decided improvement, though not so great as any one, I think, would have expected from seeing the position and action of the instrument, and that it did not in the least embarrass the muscular motion of the surrounding soft parts. Though the impediment still continued in a great degree, yet some improvement was manifest when the patient made a louder effort of the voice than usual; whereas, formerly, and with the instrument removed, the imperfection of the voice was observed to increase in proportion to the effort made. It seemed desirable to render the closure more complete. With this intention, the size of the velum was increased by adding to the lower margin, and attaching a sort of wing to each wire, which projecting obliquely forwards and outwards, laid upon the anterior surface of the columns or sides of the fissure. Thin wings, upon both the right and left sides, together with a corresponding flange projecting obliquely

backwards and outwards behind the fissure, formed a sort of groove fitted to receive the columns. The result of this arrangement was, that upon the least contraction of the surrounding soft parts, the passage to the nares became completely closed, and the voice was necessarily compelled to find its exit through the mouth, in consequence of which its general character became considerably improved.

It was, however, the tone and volume of the voice that were improved, and not the articulation, to any remarkable extent. This was demonstrated by the fact that the patient was able to make himself heard and understood from a greater distance than before, and his voice did not appear to be so completely dissipated in the nasal passages. Still it must be confessed that the difficult consonant sounds, when taken by themselves, remained much the same as before, and some, in particular, seemed as completely out of his power as ever—e. g., *g* hard, as in gig, ugly, sugar, and the like; also *k*, as in kick, &c. But certain combinations of the palatal consonants were, doubtless facilitated—as *st*, in stand, instance, &c.; *dr*, as in dread: double palatals, as *d* in madder, *t* in utter, *r* in mirror, and the simple mutes and palatals generally.

The patient was, moreover, conscious of a general increased physical excitement, or accession of animal spirits, affording more confidence in the effort to articulate, which caused him to express a belief, that by attention and practice, with the aid of the instrument, he could make still further improvement. This accession of animal spirits was, probably, not wholly imaginary, as ascribable to the cheering prospect of obtaining relief from a most unfortunate infirmity; for it is likely that the presence of the artificial velum operated to obstruct and set back the current of air issuing from the glottis, and hence the supply heretofore expended in the production of sound no longer finding its accustomed free exit, now became more economically husbanded than formerly. Hence the expulsive efforts of the diaphragm, muscles of the chest, &c., during the act of speaking, tending to bring the air into more intimate contact with the blood, rendering it therefore more highly oxygenated, and, in effect, increasing its stimulant and vital properties. This absolute increased fulness of the lungs was further demonstrated by some novel sensations along the margin of the ribs, at the attachments of the diaphragm in front; and, moreover, by a sensation of giddiness, after continuing for some little time the effort of speaking or reading, which indicated an impeded return of blood from the head.

But still another most serious imperfection of the instrument soon developed itself, which seemed likely to prove an insurmountable obstacle to further progress. After exercising the voice for a few moments, it very often became sufflated, like that of a person with "a bad cold," or similar to that produced by pinching together the nostrils. This was alike disagreeable to the hearer and inconvenient to the speaker, and seemed, indeed, to constitute almost as serious an impediment to the speech as that which it was sought to relieve. It was caused by the action of the surrounding soft parts, together with the current of sound forcing the velum too far backwards and

upwards into the pharynx, producing not only a complete, but too long continued a closure of the posterior passage, and presenting, also, a nearly horizontal surface to the column of sound issuing from the glottis.

The idea at length occurred of dividing the velum into three parts, and this I regard as the foundation of all subsequent success, and without which nothing would have been accomplished worth the trouble of making public. This plan admitted of the extension of the velum further downwards, gave it a more nearly vertical position, and obviated its liability of being forced upwards, and then retained as before. The action of the muscles now carried it back far enough to meet the concave surface of the pharynx, and then, contracting upon it more closely, caused the three pieces to slide easily and quickly over each other, thus closing and opening the passage just at the intervals of time necessary for the purposes of articulation and modulation.

As the preparation of the caoutchouc made use of presents a smooth surface, and yields readily to the slightest pressure, it is found to permit the contact and muscular motion of the surrounding soft parts, without causing any irritation. When, therefore, the sides of the fissure tend to approximate, as in deglutition, gargling the throat, or the utterance of some of the short vowel sounds, the extent of the exposed surface is thus diminished, thereby imitating, to some extent, muscular contractile action, the force being derived from without, and not, of course, contained within the instrument. During the effort of speech, the surrounding muscular parts embrace and close upon the artificial velum, and press it back against the concave surface of the pharynx. The passage to the nares being, therefore, temporarily closed, the occlusion of sound is accomplished, and articulation made attainable, as the voice, or sound, as it issues from the glottis, is thereby directed into the cavity of the fauces, and there confined long enough to receive the impressions required to be made upon it by the tongue, lips, &c., in the formation of the consonant letters.

After this last essential improvement in the plan of construction, the patient began to improve rapidly in facility of articulation, and he required no other stimulus to constant practice, than the evidence that the disadvantages of an infirmity, which he had endured all his life, were daily disappearing; a new world seemed opening to his enjoyment, and he constantly had the satisfaction of meeting with old acquaintances who happened not to know what had been done, and of witnessing their expression of surprise at the change which had taken place.

It will not be supposed by any one who duly considers the force of natural laws, and the obstinacy of live-long habits, that this change was instantaneous, or that it was brought about within a miraculously short space of time. Although the benefit which followed from the grand alteration of the instrument, (dividing the velum into three pieces,) was sufficiently obvious at the outset to warrant the expectation of continued improvement of the speech,

it did not at once impress every person who happened to hear the voice without his attention being called to notice the change. Indeed, the first alteration seemed now to have been quite trifling compared with the entire change which has since taken place, as the result of practice of the voice, and getting accustomed to the use of an artificial substitute for an important natural organ. This may suggest an inquiry as to how far the relief obtained in the case should be ascribed to the course of local practice pursued, and what share belongs to the merit of the instument? But that question is at once answered by seeing "the substitute" removed, when the original impediment at once returns with a suddenness that does not fail to startle all present.

Lancet, September 13, *p.* 284.

118—*Reduction of Strangulated Hernia en masse.* [In Retrospect, Volume XI, Article 70, we noticed a paper by Mr. Luke, on what is comparatively a rare form of disease, though perhaps as we become better able to diagnose it, will be more frequently recognized. We mean the existence of a strangulated hernia, without any of the usual apparent symptoms of strangulation. Since Mr. Luke's communication, a case has been noticed by Mr. Wade, of Westminster. The patient, a man 75 years of age, had had double inguinal hernia for thirty years. Symptoms of strangulation appeared, but no hernia could be detected externally. Mr. Wade, from slight darting pain having been felt in the right inguinal region, and from the hernia descending on the left side on coughing, was led to suspect that the man had himself reduced the hernia "*en masse.*" He accordingly laid the canal freely open on the right side, and found a membranous band as far as the finger could reach, which, on division, allowed of the reduction of the hernia]

Medical Gazette, July 25, 1845. *p.* 565.

119—*On Returning the Omentum in Cases of its Protrusion.* By Bransby B. Cooper, Esq., F.R.S., &c. [A young man was pushing open a door with a gardener's knife, the point of which was towards himself. As the door was shut he thrust himself against the point, which entered the abdomen, close to the left side of the umbilicus. About three inches of the omentum protruded, which, as the surgeon was unable to return, was pushed back with a bougie. Mr. Cooper says,]

Now I have to make some remarks about returning the omentum in cases of its protrusion; in this instance, a concentrated force was employed in order to effect its reduction, but I think some little precaution is necessary in handling so delicate a tissue as a serous membrane. If it has protruded through an opening too small for it to be returned, the usual method is to enlarge the wound sufficiently to allow of its being replaced; but, if it has been so long exposed to external agents as to be altered in its character, and be unfit to be returned into the abdomen, it should be allowed to remain to slough away, or, perhaps, in order to avoid the inconveni-

ences attending upon a large slough, it may be cut off, and any vessels that may bleed tied, but do not push the ligatures in that case into the abdomen. It might be a question whether any means for the prevention of symptoms were to be adopted in apparently so simple a case; if so, what should be the means? Some may say bleed, but, in my opinion, you only disturb the natural functions by abstraction of blood, and render the patient irritable, and therefore more prone to inflammation. In this case, perfect quietude, and regulation of diet, were the means adopted, and they have proved sufficient. Purging is certainly wrong; for, by increasing the peristaltic motion of the bowels, you interrupt nature in her process of cure, by uniting the omentum to the cut edges of the wound of the peritoneum lining the abdominal walls. This patient, you observe, was four days without a motion, and even then I ordered only a small dose of castor oil, but it proved sufficient.

Medical Gazette, June 13, 1845, *p.* 264

120—*Irrigation with Cold Water in Strangulated Hernia.* In the *Journal de Chirurgie*, for June, we find an interesting account, by M. Moreau Boutard, of three cases in which irrigation with cold water enabled that surgeon to reduce the hernial tumours, after the taxis alone had totally failed. The first case is that of a woman four-and-twenty years of age, labouring under crural hernia, the the result of an effort. The hernia had existed for ten hours, and all the symptoms of strangulation were present. The taxis not succeeding, a small stream of cold water was made to fall from a height of three feet on the tumour. The contact of the cold water produced a general chill; the muscles of the abdomen contracted; the nausea ceased, the respiration was momentarily suspended, and in less than five minutes from the time the irrigation was commenced, the hernia escaped from the hands of the operator, and returned into the abdomen.

The second case was a man of thirty-five, of robust constitution, who had laboured under inguinal hernia for some years. During defecation, the hernia, which was not restrained by a bandage, escaped and became strangulated. Dr. Boutard was called in eleven hours afterwards. The intestine had descended into the scrotum, and formed a considerable tumour. The taxis was repeatedly tried, the patient was twice bled from the arm, and was placed in a warm bath, but all without success. He was then taken from the bath, and placed naked on an inclined plane, without being rubbed dry. Whilst shivering from the effect of the cold produced by the evaporation of the water with which he was covered, a stream of cold water was directed on the hernia as before, the taxis being at the same time resorted to. In the course of five minutes, the tumour became softer, its pedicle moved, and it escaped into the abdomen.

The third patient was a young man of twenty-five, likewise labouring under strangulated femoral hernia, the result of an effort.

The hernia had exhisted for eight hours only, but the symptoms of strangulation were beginning to manifest themselves. The taxis alone had been tried and had failed. Irrigation with cold water, as before, was resorted to by M. Boutard, along with the taxis and after fifteen minutes the intestine returned suddenly into the cavity of the abdomen.

M. Boutard thinks that the cold, acting on the muscular fibres, dilates the normal or abnormal openings, whether aponeurotic or muscular. It diminishes, also, the hernial tumour itself, by acting on the capillaries, by giving rise to peristaltic motion of the intestinal canal, and condensing the gases which it contains. On the other hand, it increases the contractile power of the cremaster and dartos muscles. M. Boutard quotes the case narrated by J.L. Petit, of a robust young man, twenty-one years of age, who had been bled eight times in two days, and with whom all the other means of reduction had been employed without success. A pail of cold water having been thrown over him, the hernia suddenly returned, no doubt, says Petit, under the influence of the sudden contraction of the dartos, which by its uniform contraction is much more calculated to produce this effect than the fingers.

Lancet, July 5, 1845, p. 6.

121—*On the Treatment of Strangulated Hernia after Operation.* By J. M. Arnott, Esq., [Mr. Arnott makes the following useful remarks on the treatment of strangulated hernia, in a clinical lecture upon two cases in which the operation had been successfully performed. Nothing of an aperient nature, unless we call hydrarg. cu. cretâ such, was given, yet motions followed in due course.]

The old doctrine was, that after the operation for strangulated hernia you could not have too many motions, and therefore purgatives were to be administered of active character immediately after the operation, and repeated till their effect was obtained. No doubt it is satisfactory to find evacuations per anum following no long time ofter the operation, but it is a different question whether we should always take active measures, *i. e.* give irritating remedies, to obtain these. If your finger was swollen, turgid with blood, inflamed from a ligature having been tied round it, and left there for some hours, you probably would not think, after loosening or cutting this, that the best mode of accelerating the recovery of the part was to give the hand some active occupation, aud thereby irritate and excite it. But, on the contrary, you would be more like to keep it quiet, in an easy position, and to give nature fair play, to do the best for its recovery. The case is the same with a portion of bowel that has been strangulated, and is an analogous condition from an analogous cause. Thickened, full of blood, in a state of inflammation or on the verge of it, a piece of intestine in such a state is not likely to be benefited by rough treatment, *i. e.* active aperients,irritants. Returned into its natural situation after the stricture has been divided it is best to leave it quiet—to let it alone for some time, to allow the

swelling to subside, to allow it to recover. In some cases you must trust to nature alone for the cure; in others it is advisable to endeavour to assist her, by resorting to the means we usually employ for arresting inflammation, as was done in the case of this woman. The object to look to in these cases is the restoration of the bowel to its natural condition; if we could only insure this, we should not feel any great necessity for giving purgatives, as motions would follow of course, or, if they did not, they might be solicited by aperients without fear, as in other cases where the bowel has not sustained any injury, or undergone physical change. No doubt there is a time for giving aperients, mild ones especially, but this time, the proper period for doing so, is even of more importance than the character of the aperient.

Medical Gazette, August 22, 1845, *p.* 712.

122.—*On Recovery from Intus-susception, by Sloughing of the Intestine.* By S. J. Jeaffreson, M.B.—[At a late meeting of the Royal Medical and Chirurgical Society, Mr. Jeaffreson read an account of a case of intus-susception of the bowel, which he had attended, and recovery by sloughing of a portion had occurred; The patient was a young man, 17 years of age. He was labouring under general febrile symptoms; the countenance was anxious-the abdomen becoming tympanitic: nothing would stay on the stomach: the matters vomited had a grass-green colour. Calomel and opium, and purgatives, were given for three days, and clysters used, when decided symptoms of inflammation of the peritoneum and bowels appeared.]

Leeches, fomentations, &c. were used in addition to the other means, but no evacuations took place till the 31st, when there were very copious and offensive discharges from the bowels, and the vomiting ceased. From this date the patient gradually recovered. Copious ovacuations took place, charged with gelatinous looking mucus, and on one occasion, a small quantity of blood.

On the 8th June, there was discharged from the bowels what the author supposed to be either a portion of the small intestine, or a cast of it, (of coagulable lymph); it was about $2\frac{1}{2}$ or 3 inches in length, and of a tubular form; smelt horribly putrid, and one or two minute points presented the appearance of sphacelus. After this, with some slight interruption, the patient recovered.

The substance voided was examined under the microscope by Mr. Toynbee, who stated that he found cellular tissue, traces of blood-vessels and nerves, and epithelium. Mr. Dalrymple, who also examined it, thought that involuntary muscular fibre might also be detected, but could not speak positively, from the preparation having been placed in spirits of wine for some time.

[Dr. Williams could not agree that such cases were remarkably uncommon, though they might rarely be met with by any one individual.]

In tropical climates it was by no means uncommon for even a foot or more of intestine to come away in severe cases of dysentery. It would seem almost as if this were the mode established by nature to effect a cure. He referred to some cases published in a late number of the Transactions of the Medical Society of Bombay, in which as much as two or three feet of intestine were thrown off, and the patient recovered.

[Mr. Fitzmaurice had practised many years in Ceylon, where severe sloughing dysentery was very common among the natives.]

It was no uncommon occurrence for six, eight, or even eighteen inches of intestine to slough away, and yet recovery take place. In the Museum at Woolwich are many preparations illustrative of this fact.

Medical Gazette, June 6, 1845, *p.* 255.

123.—*Cure of Intestinal Fistula by Compression.* By Dr. O'Ferrall, Physician to St. Vincent's Hospital, Dublin. Dr. O'Ferrall has recently cured a case of intestinal fistula by a plan of treatment which we believe to be novel in such cases, viz., the adaptation of pressure by means of a compress applied over the orifice.

The patient was 37 years of age, had been married thirteen years, but only had one child. When admitted into the hospital, she stated that, after suffering for some time under debility and drowsiness, she was suddenly seized, two years before, with severe pain in the left groin. A tumor soon appeared, which disappeared on poulticing, and all uneasiness along with it. She had neither nausea nor vomiting, nor were the bowels obstructed at any time.

On Christmas day last, a similar tumor appeared, attended by the same circumstances, but much more obstinate than the first. Whilst carrying a pan of water up stairs, she was suddenly seized with severe pain, which caused her instantly to vomit, and this continued four days. She was told she had a rupture, but as the part was too tender to allow of a truss being worn, she continued to poultice it until it burst.

On admission there were no very urgent symptoms; the bowels were regular, and the abdomen appeared natural to the feel. Under Poupart's ligament on the left side were three small fistulous openings, from which a fæculent discharge issued; there was no pain on pressure being made upon the openings.]

Treatment.—On admission a poultice was ordered to be kept constantly applied over the fistulæ; and some castor oil was given. After the lapse of a week, the openings were freely touched with a solid cylinder of lunar caustic: this was repeated for some days. A truss was then attempted to be applied, but no advantage being derived from it, a T bandage was substituted, covering a graduated compress, and the patient was instructed how to apply the pressure, chiefly above Poupart's ligament, and over the pubis, and extending towards the fistulous orifices. Under this treatment, the charge diminished, and the openings contracted.

Result.—May 29th, dismissed cured: the fistulæ perfectly cicatrized; her general health much improved.

[Some remarks are then made on artificial anus, as contradistinguished from intestinal fistula. In the former, the intestine presents directly at the groin; its continuity is interrupted, and a portion of its parietes is lost. In intestinal fistula, on the contrary, the continuity of the tube is uninjured; there is a duct of more or less length between the intestine and external orifice, and the perforation is very small.]

The treatment of the *intestinal fistula* consisted, simply, in means for obliterating the fistulous tract in its course between the intestine and groin, without injury or irritation of the former. To fulfil this indication two separate agencies were employed in the present case. The first was, stimulation of the lining membrane of the fistulous canal, by the daily application of the nitrate of silver. The second was, the application, just above Poupart's ligament, of a truss, the pressure of which should prevent the further descent of fæculent matters, and keep the parts in close and constant contact.

The truss was found to occasion pain, and was given up at the instance of the patient. The graduated compress was more successful. The best mode of applying it was as follows: The exact situation and limits of the intestine should be ascertained by percussion; a narrow roll of lint should next be laid over the track of the fistula, and retained by a strip of soap plaster. Over this a broader roll of lint is to be laid transversely, and over all a still larger compress, each retained by separate adhesive strips. This graduated compress should be bound down by a roller, passed round the pelvis and under the thigh. The patient should be taught to keep up the pressure by the hand, whenever disengaged; and this is especially necessary when he is changing his posture.

Dublin Hospital Gazette, July 15, 1845, p. 159.

124—*Recovery after Removal of Seventeen Inches of Intestine.* By Dr. A. Brigham, Superintendent of New York State Lunatic Asylum.

[The following very remarkable case of recovery, after extensive loss of small intestine, has lately occurred. The patient, a married woman, who had had five children during the two previous years, was admitted into the Asylum with which Dr. Brigham is connected, in June, 1843.

As some fears were entertained that she would attempt suicide, she was strictly watched, and placed in a room where no instruments by which such purpose could be effected, were kept.]

No material alteration in her case was noticed until October 24th, when about nine o'clock in the forenoon, she obtained a pair of large scissors, that had been accidentally left in the hall, which she took to her room, and with which she made two wounds into her abdomen, one about an inch and a half above the umbilicus, the

other half an inch below it. From the upper opening she took out part of the small intsetines, from which she cut off a portion, *seventeen inches* in length, when she was discovered by another patient, and alarm being given, she was forced, not without some resistance on her part, to cease from further injuring herself.

Dr. Buttolph, the assistant physician, was near and saw her immediately, and discovering that the intestine was entirely separated, and also a considerable portion of the omentum, and that one end of the intestine was withdrawn into the abdomen, concluded the case would soon prove fatal under any treatment, and therefore returned the end of the intestine that protruded, into the abdomen, stitched up the wounds carefully, and covered them with adhesive plaster,—applied a bandage around the body, gave her an injection of laudanum, and directed an attendant to remain with her constantly. While thus dressing the wound she vomited, but did not appear to have much pain.

On examining the detached intestine, which she had cut into in several places, it was found to contain a small quantity of fæces, and weighed *one ounce and one drachm;* the omentum, which was separated from it, weighed *one ounce and two drachms.* The ends of the intestine were ragged, and had been cut off obliquely. For a few days she was disposed to vomit, and was not able to retain any thing on her stomach but a trifle of water, Injections of laudanum and broth were administered, and she was kept constantly quiet. After a few days she called for food, and was able to retain a very little, and in about ten days she asked "if she had not ought to take some physic?" She was reminded of the accident, and told that it would be improper to give her physic; but she did not appear to think so, and said she "felt as if it would do her good, and that she ought to have some."

She continued without much change, very quiet by aid of injections of laudanum, eating a little several times in the day, and vomiting occasionally, but without any marked tenderness or inflammation of the abdomen, until the 26th of November, *thirty-three* days after the accident, when she had a small discharge from the bowels of hardened fæces, and on the next day a copious one. This, she said, gave her great relief, and from this time she began to improve. The wounds had already healed, and she was soon able to walk about. Since then she has continued to have regular evacuations from the bowels, though there is rather a tendency to diarrhœa, for which she often takes laudanum.

She now eats tolerably well, though inclined to vomit when she eats heartily. She is able to be about the house, and sews and knits, and is as well as she was for several weeks previous to the injury. She is, however, still feeble, and does not gain flesh, but is calm and quiet, though her mind is in rather a demented state.

I refrain from any remarks, and have no explanation to give of the case other than is obvious to every one.

American Journal of Medical Science, April, 1845, *p.* 355.

125.—*Air-bougie in Stricture of the Rectum.* [In the New Orleans Journal, Professor Mütter, of Philadelphia, thus describes an air-bougie for strictures of the rectum.]

It occasionally happens, with all our care, that the introduction of the ordinary bougie is so painful as to forbid its use. In such cases I employ an instrument of a construction essentially different from those hitherto described. It consists of a small bladder tied firmly to a nozzle furnished with a stopcock and screw nipple, to which is attached a flexible tube, twelve or fifteen inches in length. When about to be introduced, the bladder is moistened with warm water and then oiled, and the tube screwed on. A blunt probe is then engaged in a fold of the bladder near its apex, and the two carried along the forefinger, previously introduced as a guide, until the orifice of the stricture is reached. A very slight effort will carry the probe and bladder through the stricture, which being accomplished, the probe is withdrawn, and then the surgeon, applying his mouth to the tube, inflates the bladder, until the patient complains of pain ; the stopcock is then turned, the tube unscrewed, and the "air bougie" allowed to remain as long as the patient can bear it. I have used this instrument for several years, and with great advantage, and am not aware that it has ever been employed by any one else. The nearest approach to it was the instrument of Calvert, who proposed to introduce a prepared gut, and then fill it with water, as is done by Mr. Arnott in some of his various dilators. Whether he used this instrument or not, I am unable to say.

Lancet, Aug. 2, 1845, *p.* 139.

126.—*On the Treatment of Internal Hæmorrhoids.* [The bad effects which occasionally follow the excision of piles, render it very desirable to adopt some other mode, if any can be found equally efficacious. These are avoided to a great extent by the use of the ligature, as practised by M. Amussat for many years, but certain nervous symptoms are sometimes thus produced of a troublesome character ; on the discovery, therefore, of the solidified Vienna paste, he immediately adopted it.]

A great number of patients have already been operated on with this caustic, which consists of a cylinder composed of solidified potass and lime, and the effects were far less serious than when the ligature was had recourse to. At first, Dr. Amussat seized the hemorrhoidal tumour with a pair of dissecting forceps, so as to enable him to cauterise it more easily ; but in April, 1844, his son, M. Alphonse Amussat, thought that the circular cauterisation of the pedicle, by means of forceps, might replace advantageously the cauterisation of the whole of the tumour, and consequently requested M. Charriere to make several forceps *porte-caustique*. That to which Dr. Amussat gives the preference is similar to the forceps used in dressing wounds, whose rounded blades form two little cylinders of about an inch and a-half in length, and from one to two

lines in diameter, which increase in width as they become deeper, and are made to receive solidified caustic, or a paste made with the powdered caustic and a little alcohol. One of the extremities, longer than the other, is bent like a hook, so as to prevent the hemorrhoid from slipping when seized, and at the same time, as the furrow exists on its internal surface, to cauterise the tumour. This instrument may easily be made with an ordinary dissecting forceps, by cutting off the extremity of one blade, bending the other at right angles, and making a furrow on its inner surface.

[A case is given illustrative of the mode of proceeding, and the precautions to be adopted to guard against unpleasant after-symptoms.

The patient was 60 years of age, and of good constitution ; in 1840 he first had some uneasiness in the rectum with slight hæmorrhage. The symptoms occurred more and more frequently, and were much aggravated by fatigue. The tumour became at last so large as to resemble prolapsus ani. When M. Amussat was called in he found two hæmorrhoidal tumours, whence arose great pain, and which had caused a degree of prolapsus ani. The operation appeared indispensable, and accordingly, an enema and total abstinence from food were prescribed, and the following day,]

An enema having been administered, in order to empty the rectum should it contain any fæcal matter, and the patient having strained, as if at stool, the two hemorrhoids became very apparent. They were about the size of a large nut, but somewhat flatter, and were placed on each side of the gut, not very far from the anal orifice, and presented two corresponding external tumours. The patient was then placed on the right side, and Dr. Amussat seized with the forceps *porte-caustique*, the left hemorrhoid, which was the largest and the most painful: after a minute and a half, without letting it go, he opened it throughout its whole extent; evacuated the blood contained in its interior, and cauterised it with the solidified caustic: the latter part of the operation lasted only half a minute. Two injections were next made, in order to remove any particle of the caustic which might have remained, and which might cauterise the surrounding parts ; and the patient was placed in a hip-bath previously prepared, in which he remained several hours, without experiencing any violent pain. The night was passed favourably; no fever; and the next morning the pain was not very intense; the cauterised hemorrhoid was flattened, blackish, similar to an eschar, and the two edges of the incision were visible. Very little food, and an astringent tisanne, were prescribed, in order to prevent any stools taking place, as they might cause the hemorrhoid to separate prematurely, and be followed by hemorrhage. For six days, this treatment—frequent hip-baths, injections, cataplasms on the anus, and a little broth only was strictly adhered to ; when, on the seventh day, the hemorrhoid separated without producing the least pain, after a very small stool.

On the 24th, I called again on M.D.; he was then quite well, and,

instead of the hemorrhoid, there was a small linear cicatrix, about a line and a half or two lines in length, surrounded by a reddish areola and slight suppuration. The right tumour appeared to have decreased, and to be shrivelled. During the week which preceded the separation of the hemorrhoid, M. D. had several small and nearly liquid stools, produced by the enemas, but without disturbing in the least the process of cicatrisation. A few days after the operation, the patient complained of a severe pain in the left external hemorrhoid, and a small opening was made with a lancet, and a red granular substance escaped, with instantaneous relief. Dr. Amussat intends at a future time to cauterise the right hemorrhoid.

Medical Times, Aug. 16, 1845, *p.* 387.

[Dr. O'Ferrall has found *matico* of great service in certain hæmorrhoidal affections. He writes,]

There is a form of disease engaging the verge of the anus, and a portion of the mucous membrane above it, in which I have found this vegetable astringent to produce unequivocal and rapid amendment. As the matico will probably be much employed, and as it may occasionally disappoint our expectations, we should endeavour to observe and define the cases to which its properties bear a therapeutic relation.

The condition to which I allude presents some characters in common with the "vascular tumour of the rectum," in which the nitric acid recommended by the late lamented Dr. Houston is so often useful.* But it does not, like the vascular tumor, require the nitric acid,—it is not like the inflamed varix, much influenced by leeching—and the operation for fissure is unnecessary for its cure.

It appears to be the simple result of chronic inflammation of the integument, at the verge of the anus, and of a portion of the mucous membrane above it, the latter assuming the appearance of that hypertrophy, which is usually termed the villous state.

When examined externally, the verge of the anus presents a considerable swelling, of a purple colour, and divided into separate tumors or prominences, by fissures or folds of the skin. When these tumors are separated, (which gives exquisite pain if hastily done) the bottom of the clefts is exposed, and the cuticle is there found to be abraded, and the surface covered with a sero-purulent discharge. These fissures are sometimes deep, and penetrate through the cutis to the cellular tissue beneath. The consistence of the swellings is firmer than that of the true hæmorrhoid in the recent state, but wearing its purple tint. They cannot be emptied by pressure. They are, on the other hand, less firm than the hæmorrhoid in the state of chronic consolidation. The cellular tissue of the part appears to be in a state of œdema, and covered by a thickened skin. Where the parts are forced or drawn out, the mucous membrane is found to be tumid, vascular, and apparently deprived of its epithelium; it is easily made to bleed.

* See Dr. Houston's papers in Retrospect Vol. 7, Art. 62, and Vol. 10, Art. 64.

This condition of the mucous membrane does not extend very far upwards, and its prominence is little, compared with that of the vascular tumor of the rectum. It is not protruded at stool, and therefore, perhaps, yields little blood, compared with what oozes from the former when occasionally strangulated by the sphincter.

These are the anatomical characters of the condition in which the matico will be found to succeed. It appears to consist of chronic inflammation of the inner and external integument and cellular tissue, the prominence of the skin throwing it into folds, the clefts of which are apt to ulcerate, and when stretched during defecation, may occasion pain, which resembles in some respects that of fissure. I have not seen any trace of true varix, internally or externally, in this affection. The purple tint appeared to depend on congestion of the extreme venous radicles only.

This complaint begins gradually, and is chronic in its formation, but at length becomes so painful, that the erect or sitting posture can scarcely be borne. There is pain in defecation, which persists for a short time only afterwards. There is occasional, but not constant bleeding, and only in trifling quantities, but there is constant painful uneasiness, with sense of weight, increased by walking, and at length rendering the erect position almost intolerable.

I have seen this state in several persons, at or beyond the middle periods of life. Both sexes are liable to it. It is called "piles," but leeching and cold applications produce only temporary benefit, and warm applications have been found to increase the morbid sensibility of the parts.

The mode of employing the matico in this affection, is in the form of ointment, or lotion. Dr. Young, of Winslow, recommends the ointment in "external hæmorrhoids." In the affection here described, the decoction appeared to me to succeed best. A dossil of lint, soaked in a decoction, made by boiling two drachms of the leaves in six ounces of water, is to be introduced within the anus three times daily; another piece of lint, in form of a compress, similarly charged, is laid outside, and covered by oiled silk: the whole is supported by a T bandage.

If the resemblance to vascular tumor should induce the application of nitric acid in this affection, it will be found to have done too much. The tumour of the mucous membrane, is too slight to bear the escharotic, and the patient will be worse than before. It may, therefore, be found practically useful to describe a state of parts, in which the matico is really an innocuous and adequate remedy.

[The following case is given in illustration :—J. H., aged 30; has suffered from piles for a long time ; has been much worse for a month back ; pain when at stool excruciating. His countenance was anxious and depressed from want of rest; several large swollen, and extremely painful purplish tumours surround the anus; the gut, on bearing down, red and inflamed, appearing like "vascular tumour ;" not much hemorrhage.]

Dublin Hospital Gazette, Oct. 1, 1845, *p.* 49.

127.—ON A PECULIAR ULCER OF THE ANUS.

By J. J. Scallan, Esq., Lecturer, Apothecaries' Hall School of Medicine, Dublin.

The symptoms which characterise this disease may be summed up in a very few words. It is ushered in by an uneasy sensation at the anus, increased on going to stool; as the disease progresses, the sufferings, during the act of defecation, become daily more aggravated, conveying to the patient a sensation of scalding, or of a red hot iron being introduced into the gut; on the completion of the act of defecation some relief is felt by the patient, but, after the lapse of a few minutes, the sufferings are renewed, and continue unmitigated for a length of time, varying, in different cases, from four to nine or ten hours, when they gradually abate, and, at length, leave the patient at perfect ease, until a renewal of the necessity for the passage of the fæces causes a return of the sufferings.

The symptoms here detailed are very nearly identical with those caused by one form of fissure of the anus, namely, that described by Dupuytren as occurring at the level of the sphincter, but, as I am not prepared to admit the perfect accuracy of his division, I shall in this essay speak of fissure in general terms. One difference, nevertheless, exists, and serves in most cases as a point of diagnosis, namely, that in the disease under description, the patient, during the interval, in most cases, suffers so slightly as scarcely to be cognizant of any annoyance, but, in fissure of the anus he is at no period at ease, suffering, during the intervals, a sensation of much heat and tension, which gives place, when the cause for exacerbation arises, to the intolerable anguish hitherto considered the characteristic of the affection, and which is symptomatic also of the disease under consideration.

By attention to the points of difference just mentioned, we shall be enabled, in some instances, to diagnose the disease by the symptoms alone, but we cannot do so in all cases, and, when we take into consideration the unsatisfactory statements often made by patients, we may come to the conclusion, that in no case can we thus arrive at a complete diagnosis; in fact, whereas we can simply, by the symptoms, diagnose those two affections from all others, we cannot separate one from the other until we shall have resorted to a manual examination.

On proceeding to the examination of the anus, we are first struck by the absence of that permanently contracted state of the orifice, which is an almost invariable accompaniment of fissure. Generally speaking, in the disease under description, the orifice is as lax as in the healthy state, or if it be in any case contracted, it is but slightly so; this lax state of the orifice allows the examination to be made with much less pain to the patient, and equally less difficulty to the surgeon, than in the case of fissure, circumstances which cannot fail to attract the attention of any one who has had experience in those diseases. On proceeding with the examination, the next point which attracts attention is the absence of the fissure. We

seek it at its usual seat (the lateral and posterior parts), but find that no fissure exists. If the finger be now introduced sufficiently far to be on the level of the upper part of the sphincter, laid flat on the mucous membrane, and carried over its lateral and posterior parts, its extremity will sink into an ulcer, rather deep, and of a size varying from half an inch to an inch in diameter; the dipping of the extremity of the finger, and the sensation which the rough surface of the ulcer conveys to it, indicate satisfactorily the existence and situation of the ulcer, which is confirmed by the sensations of the patient, for the words of Dupuytren, in describing the symptoms of fissure, are also precisely applicable to this disease: "*la pression fait ressentir beaucoup de douleurs.*" We also find in this disease, that, immediately on the pressure being made on the surface of the ulcer, the finger is grasped by the contraction of the sphincter muscle.

It will be perceived, that the ulcer which I have endeavoured to describe differs in many points from those noticed by the authors above mentioned; for instance, its size is generally smaller, and *it is excavated*, &c. &c.

The reader will observe the great similarity between this ulcer and that described by Mr. Colles; but he will also observe points of difference sufficient to prove that they are not identical. If I were to reason from the symptoms, I would say, that they are the same disease, occupying different situations. The ulcer of Mr. Colles, being situated above the sphincter, and that under description on its level, we should thus have two forms of ulcer (excavated), as we have two forms of fissure, one above, and one on the level of the sphincter; but I have not sufficient experience of Mr. Colles' ulcer, to say, whether this explanation be borne out by observation.

The treatment which this ulcer demands is identical also with that so successfully practised in cases of fissure, the symptoms of which it so closely resembles, namely, division of the sphincter muscle, an operation, the performance of which is devoid of danger, and, in the present disease, owing to the laxity of the anal orifice, of difficulty also, the only instrument required being a long, probe-pointed bistoury, either slightly curved or straight, which, having been placed flat on the index finger of the left hand, is, by the introduction of the finger, carried into the rectum; the extremity of the finger having sunk into the ulcer, is carried to its upper edge, where it is allowed to rest; with the right hand the bistoury is now pushed upwards, until it also touches the upper edge of the ulcer, the bistoury is then carried boldly downwards and outwards, cutting completely through the substance of the muscle, and making the wound and the ulcer one continuous surface, as recommended by Mr. Colles. The after treatment is sufficiently simple; a dossil of lint dipped in oil, or smeared with simple cerate, is to be introduced into the gut, which, in a few days, should an ichorous discharge, which in some cases occurs, demand it, is to be replaced by a lotion of ol. olivar. et. liq. plumbi subacet. This will, generally speaking, be sufficient to complete the cure; in some cases, other mild applications may become necessary, but never any of a severe character.

[We are inclined to believe, that the ulcer thus accurately and minutely detailed in the foregoing graphic description, is identical with that mentioned by the late Mr. Colles, in the fifth volume of the Dublin Hospital Reports, page 155, in 1830, and subsequently lectured on, at the College of Surgeons, in 1835 and 1836, when he entered more fully into its peculiar characters and mode of treatment, than we find in the terse but faithful description of it in the work just alluded to. In that mentioned by Mr. Colles, the ulcer was situated at a short distance from the anus, was attended with purulent discharge, and sharp pain on going to stool, which continued for an hour or two afterwards. On examination the finger sunk into the small hollow cup of an ulcer with hardened edges, but soft in the centre.

In his lectures, we remember this eminent Professor mentioning the peculiar laxity and "*ever-shaped*" condition of the external margin of the anus. His mode of examining these ulcers was, we believe, peculiar to himself, and consisted in the introduction into the rectum of a conical piece of polished box-wood, representing, in its transverse section, a full ellipse, on one side of which a large blunt gorget was accurately fitted, so that, when placed together, they presented a perfectly smooth outline. Having introduced this for nearly three inches into the gut, the wooden plug was pushed slightly onwards with the thumb, while the handle of the gorget was retained steady in the palm of the hand. By this manœuvre the gorget was disengaged from its groove, and the plug withdrawn, and then the surface of the gut could be seen reflected on the polished concave surface of the metallic instrument, and its lower portion accurately examined with the eye, by directing the patient to evert the anus as much as possible. Several forms of specula have been since invented, but few better than this simple apparatus, which gave very little pain on its introduction; and the pupils of Mr. Colles will long remember the tact and dexterity with which he conducted these anal examinations. Might not the simple cylindrical speculum used for investigating the condition of the membrana tympani or os uteri be advantageously employed in these cases, to which, if necessary, a prism could be attached. Mr. Colles concludes his article in the Dublin Hospital Reports, by detailing his means of cure, which was "to introduce into the rectum a convex-edged scalpel, and make an incision through the entire length of the ulcer, continuing it through the sphincter, and dividing the edge of the anus.—*Editor of Dublin Journal*]

Dublin Journal of Medical Science, Nov. 1845, *p.* 217.

128.—*Ulcer in the Rectum.* [A man came under Mr. Luke's care who had pain on passing stools, which increased to such an extent that he was almost prevented from passing them at all; he frequently observed blood on his linen after a stool. On inspection of the rectum by means of a speculum, a superficial ulcer, about

the size of a threepenny-piece, was discovered at its posterior part, just within the sphincter.]

The sphincter was divided by cutting directly through the ulcer. The next time he evacuated the bowels, he had lost the pain previously felt, and experienced a mere soreness from the incision. To continue the sulphur electuary which he used previously to the operation. In ten days he had quite lost all the former unpleasant symptoms, and left the surgical wards.

Remarks,—This is an example of a class of cases of exceedingly practical importance, in consequence of the great suffering they give rise to, and the fact of their being not unfrequently overlooked. They are also interesting from the marked and speedy relief afforded by the division of the sphincter, in whatever way it may act.

Lancet, May 17, 1845, *p.* 572.

129.—ON POLYPUS OF THE RECTUM.

By James Syme, Esq., F.R.S., &c.

[In his lectures on Surgery, Sir A. Cooper stated that he had only met with ten cases of polypus of the rectum. Mr. Syme states that he once saw five in the course of a fortnight, and thinks it not so rare as is generally supposed.]

It presents itself in three different forms, of which one usually occurs in childhood, and does not appear much beyond puberty. A gentleman now established in practice, not far from Edinburgh, when attending my lectures,—then I suppose about 18 or 19 years of age,—applied to me for the removal of a polypus, such as is met with in early life, but, with this exception, I never met with it beyond the 9th or 10th year. It is extremely soft and vascular, of a florid red colour, and assumes the form either of a worm from two to four inches in length, or of a strawberry with a connecting footstalk two or three inches long. The tumor seldom protrudes except when the bowels are evacuated, and then admits of ready replacement, though not without occasional hemorrhage, which may be of considerable amount. The vascularity of this growth, and its attachment above the sphincter, made me averse from removing it by incision; and Sir A. Cooper has mentioned the alarm that was on one occasion excited in his practice by doing so. I have always employed the ligature; and though the soft texture readily gives way when the thread is drawn, bleeding has never occurred in a single instance, or any other symptom in the least degree disagreeable resulted from this mode of removal: I am therefore induced to regard it as the best that can be employed.

The disease appears in adults in two very distinct forms. In one of these, the growth is soft, vascular, prone to bleed, lobulated or shreddy, and malignant-looking, so as on the whole to resemble very much the cauliflower excrescence of the os uteri, but possesses a peduncle or foot-stalk of firm texture, capable of sound cicatri-

zation after being divided. The profuse, frequent, and protracted bleeding which proceeds from this sort of growth, renders its removal an object of great consequence; and this may be effected very easily, with perfect safety, by transfixing the radical cord of connection with a double ligature, tying the threads so as to include a half of it in each, and then cutting it across a little below the constricted part. In a patient of Mr. Craig of Ratho, (who detected the disease from the great hemorrhage it occasioned,) I could not accomplish protrusion of the tumor, but guided a ligature on my finger, and tied it on the neck within the rectum. It is more satisfactory to force or draw the swelling beyond the sphincter, so that the sound and morbid parts may be distinguished with certainty, and this can usually be done with great facility, although the growth has attained a large size. In a hospital case recommended by Mr. Anderson of Castle-Douglas, I brought into view and removed a tumor not less than an orange, which had a most malignant aspect, and had nearly exhausted the patient by hemorrhage.

In the other form which polypus of the rectum assumes in adults, the tumor is of a firmer consistence, smoother surface, and more regularly spherical or oval form, so as to resemble the growth which in general constitutes *polypus uteri*. The symptoms resulting from this simple swelling are rather annoying than seriously alarming; and the patient, therefore is apt to delay requiring assistance for a long while. It the case of an old lady, whom I saw with Mr. Hilson of Jedburgh, the tumor was about the size of a cherry, with a long stalk and we were assured had protruded every time the bowels moved for twenty years. In another case, a gentleman whom I saw with Dr. Johnston of Cumnock, the tumor was nearly as large as an egg, had a cuticular covering, and appeared to have existed for a period equally long. I have always removed these growths in the way that has been already ascribed, and never met with the slightest consequence of a disagreeable kind.

London and Edinburgh Journal of Medical Science, July, 1845 *p.* 489.

ORGANS OF URINE AND GENERATION.

130.—REMARKS ON LITHOTOMY.

By C. Aston Key, Esq., Senior Surgeon to Guy's Hospital.

[Much difficulty is sometimes experienced by the surgeon in seizing a calculus with the forceps, after the bladder has been opened. In two cases where this occurred at Guys's Hospital, under Mr. Key, from the stone slipping up further into the fundus on every attempt to seize it, it was remedied by making considerable pressure externally on the fundus of the bladder; when in each case it immediately slipt between the blades of the forceps, and was extracted.]

Few cases of lithotomy present points of sufficient importance or interest to deserve a separate notice in a report. The dangers and difficulties of the operation lie in a small compass, and are pretty generally known to operating surgeons. The two cases above reported presented difficulties of a similar kind, the stone in each being lodged high up in the fundus of the bladder, so as to elude the grasp of the forceps, until it was dislodged by pressure made on the lower part of the abdomen. The cases elicited from Mr. Key the following clinical remarks on the principle of obviating this not unfrequent occurrence in the operation of lithotomy.

A calculus usually lies free in the bladder as long as the mucous coat of the organ preserves its healthy condition. The oxalate, urate, and even the phosphatic stones, are found in the base of the bladder, until the surface of the membrane becomes villous from inflammation, and its secretion becomes alkaline and viscous. The bladder, inflamed and irritated by the stone, contracts upon it with more force, and secretes an abundance of alkaline mucus, the phosphatic salts of which crystallize on the surface of the stone, and make it adhere often with considerable tenacity to the surface of the organ. This fixed state of a calculus is not only an evil in itself, adding much to the difficulty of an operation, but is met with in patients whose bladders have suffered much from the irritation of the stone, and who are generally least able to bear up against the effects of a difficult and protracted operation. The part of the bladder usually occupied by a calculus under these circumstances is the fundus, which retains the stone with tenacity, while the lower part of the organ receives the urine as it passes from the ureters; and in sounding such a bladder, the calculus is felt either on the concave surface of the instrument, or by withdrawing it towards the pubes—a circumstance that always portends some difficulty in seizing it after the bladder is opened.

It has happened more than once that a patient has been removed from the operating table with the stone remaining in the bladder, after long and continued efforts made in vain to seize it; and the failure has arisen, not from the extraordinary size of the calculus, but from its peculiar position. The forceps, at first, though opened to their full extent, obtain but a slight hold of the stone, the extremity of it only is seized, and it soon escapes from the grasp of the operator. Repeated attempts are made to gain a firmer hold of it, and at each attempt the stone is pushed further from the opening, until the forceps are obliged to be buried nearly to the handles before the stone can be felt. It is in the retreat of the stone before the forceps that the difficulty of seizing it lies. The stone, instead of retreating in a direct line from the opening into the bladder, ascends behind the pubes, where the forceps cannot, without assistance, reach it, much less grasp it. The cause of this difficulty is not easily ascertained in the adult; the parts lie too deep for the finger to learn with precision how the stone lies in the

bladder, and what constitutes the difficulty in seizing it. In a child, however, the parts being on a small scale, the exact cause of any difficulty in the operation can be appreciated and met.

In children such a difficulty as that above alluded to occurs but seldom, and the fundus of the bladder is not so distant as to place the stone beyond the operator's reach, even when grasped by the coats of the bladder. But in the younger of the two patients on whom Mr. Key operated, this difficulty occurred in a degree which he had but once before met with in a young subject, and would have rendered the attempt to extract the stone abortive, had not he directed pressure to be made above the pubes, so as to bring the calculus within the grasp of the forceps. The handles of the forceps, though depressed as much as the wound would allow, could not carry the blades high enough to reach the stone, and it required very firm pressure on the lower part of the abdomen to depress the stone sufficiently to enable the forceps to seize it. As soon as firm pressure was made, the stone could be felt to descend between the blades of the forceps.

It is more than probable that in many of the cases recorded of insuperable difficulty in extracting calculi of ordinary size by lithotomy, the operator has not sufficiently borne in mind the impossibility of directing the blades of the forceps to the altered position of the stone, which, from the pressure of the forceps in the unsuccessful attempts to seize it, retires, not backwards but upwards, so that it becomes placed in a line little less than perpendicular in relation to the external incision. In such a situation, even in very young children, it becomes difficult to seize it; and in the adult, especially when the prostate gland is enlarged, impossible to reach it. The advantage of pressure made above the pubes was forcibly shown in the cases reported above and the cause of difficulty clearly illustrated.

Medical Gazette, August 15, 1845, *p.* 665.

131.—ON LITHOTOMY.

By Bransby B. Cooper, Esq., F.R.S., &c.

There are four steps (says Mr. B. Cooper) in the operation, as I perform it, viz., open the perineum, open the pelvis, open the bladder, and take out the stone.

Well, the first thing you do when the patient is laid on the table, is to sound him, and be sure that you feel the stone before you operate. Having ascertained the position of the stone, he is then to be tied up in the usual manner; and it is as well to tell the patient to practice the position, in order that he may become somewhat accustomed to one so unnatural; then pass the straight staff, and give it to an assistant to hold. Then, having examined the perineum, and ascertained the point of junction of the raphé of the perineum with that of the scrotum, place the tip of the forefinger of your left hand upon it, and commence your incision about

one finger's-breadth to the left of it, carrying your knife downwards and outwards to a point midway between the margin of the anus and left tuberosity of the ischium. By this incision you lay open the perineum; next pass your finger into the wound, and feel for the staff in the membranous portion of the urethra, and keeping the bulb out of the way, place the point of the knife in the groove of the staff, and make your second incision through the deep perineal fascia, in the same direction, and to the same extent, as the first. You have now completed the second step, aad opened the pelvis: I know my anatomical friends will cavil at this, and say that I have not opened the pelvis; but there is only a slight fascia intervening.

Next, commence your third step in the same place in which you did the second, by again placing the point of the knife in the groove of the staff; and, taking the handle of the latter in your left hand, from the assistant who has been holding it, depress it, till it is nearly parallel with the handle of the knife. Then push the knife along the groove in the staff, through the prostate, into the bladder, which you will know to have entered, by the resistance offered to its passage ceasing. This is a difficult part of the operation; for if you let the knife slip out of the groove, between the bladder and rectum, much mischief must accrue. You should have the groove of the staff turned a little to the left, in order that your incision through the prostate may correspond with the other incision. Next pass your left forefinger into the bladder, and the staff being withdrawn, feel for the stone. In order that you may not make a larger incision through the prostate gland than is necessary, your lithotomy knife should be of the same breadth as your fore-finger, so that it may make an opening just big enough to admit it; and trust to enlarging the opening of the prostate by lacerating it with your finger:—lacerating is an ugly word, gentlemen, but it is a safe one. You have now finished the third step, viz., opened the bladder. All that you have hitherto done is what every good surgeon ought to do without difficulty; but the rest is beyond his control. I mean the fourth step—removing the stone. I have seen the very best lithotomists fail in seizing it, and the patient has been removed to bed with the stone still in his bladder. When you have your finger on the stone, and you introduce the lithotomy forceps along it into the bladder, with the blades of course shut, keep them so, until you have felt the stone with them. Then open them, and, seizing the stone, gently and gradually withdraw it. You should hold the forceps with their flat surfaces looking upwards and downwards, in order that you may be able to open them sufficiently, and also to protect the soft parts from injury in the abstracting of the stone.

They should also be of a good length: you may ask, are not the common forceps sufficiently long to reach to the fundus of the bladder? Yes, so they are, but when the ends of the blades are at the fundus, those of the handles are at the external wound, so that you cannot open the blades wide enough, perhaps, to admit the

stone. Therefore it is better to have them long, so that the hinge may be in the perineum; then you will be able to open the handles.

Medical Gazette, June 13, 1845, *p.* 265.

132—*On the use of the Canula after Lithotomy.* By — O'Ferrall, Esq., M.D., Senior Physician to St. Vincent's Hospital, Dublin. [The use of the canula after the operation of lithotomy, though practised by some, is by too many surgeons altogether neglected and despised. We say too many, because we believe that a neglect of this simple precaution is, from infiltration of urine, not unfrequently the cause of death. In Ireland it seems much less used than in this country. Dr. O'Ferrall gives the history of the *first* case in which it was used in the hospital with which he is connected. The patient was a lad six years of age, with stone in the bladder, for which, after the usual preliminary treatment, the lateral operation was performed. The flexible tube was then introduced, and it is mentioned that the other surgeons were averse to its employment, they having been accustomed to use it only in cases of hemorrhage, which was not present in the one under notice. The cure was rapid, and the wound healed in about sixteen days.

Dr. O'Ferrall remarks, that after the extraction of the calculus, it is usual in Irish hospitals to leave the urine to find its way out through the wound. The principal objection to the use of the canula is the fear of its causing inflammation of the lining membrane of the bladder, but this has been found by experience futile, And surely, if authority or precedent have any weight, its use by Dionis, Le Dran, Ambrose Paré, and in our own times by Sir B. Brodie, and Mr. Liston, are enough to sanction its employment.]

When the tube is not employed, the urine accumulates, and the peritoneal coat of the bladder, and the cellular tissue, are put on the stretch; and when the urine is expelled, the same tissues are again put in motion, and are contracted on themselves. This alternate expansion and contraction cannot be favourable to our hope of preventing the occurrence of inflammatory irritation in the parts.

On the other hand, when the tube is retained in the bladder, the latter ceases to expand or to contract, and the peritoneum and cellular membrane, are placed in that state of repose, most favourable to the prevention of a dangerous or fatal reaction.

Having resolved on employing the tube, it remained to determine its consistence and shape. Ambrose Paré used "a silver pipe;" but the flexible instruments at our disposal were then little known. The catheter-shaped instrument now in use, appeared to me to have this disadvantage, that its slender point would be more readily forced out of the bladder, and more liable to injure its lining membrane.

The tube made for me by Mr. Robertson, of Batchelor's walk, is seven inches long, and about the size of the catheter No. 13. At its neck or narrowest part, above this point, it expands into a bulb

of oval figure, which is perforated by one large opening at its extremity, and four smaller ones in its sides. The bulbous end seemed to be less calculated to excite irritation than the catheter point, and less likely to slip out of the bladder before the proper time. This conformation appears also to be more capable of preventing the urine from trickling along the outside of the instrument, because the bulb resting on the edges of the incision in the neck of the bladder, will have a tendency to block it up, and by presenting on all sides convenient apertures, will give the urine a direction through the tube. And this is precisely what occurred in Yeates's case. Mr. M'Swiney and Mr. Doyle, examined the wound and the extremity of the tube repeatedly during the day, and Mr. Grey and Mr. Ffrench at night, and found the wound invariably dry and free from urine, and the whole of the latter trickling freely through the tube into a shallow vessel, into which it was received for analysis.

The instrument was allowed to remain in situ for 30 hours, in order to ensure the consolidation of the cellular tissue. Its withdrawal was accomplished with the greatest facility. There was no expression of pain, and I did not experience the slightest resistance in the parts to the gentle traction employed.

There is, therefore, neither pain nor irritation, nor constitutional disturbance occasioned by the insertion of a properly made tube after the operation of lithotomy; and many sources of pain and danger are avoided by its use.

1st, The scalding pain, inseparable from the passage of urine through a fresh wound, is prevented.

2nd. That insidious, but too surely destructive accident, infiltration of urine into the cellular tissue, is rendered nearly impossible.

3rd, If hemorrhage should occur, it may be, as is well known, generally arrested by its aid.

4th, The peritonitis and the diffuse inflammation, phlebitic or cellular, which might be supposed to spring from the alternate expansion and contraction of parts, newly subjected to operation, is as far as the repose of the pelvic viscera is capable of effecting that desirable object, averted.

Many motives will combine to determine a practice, so calculated to lessen the rate of mortality assigned to this operation. It may save life, and humanity will recommend it,—it may ensure success, and the desire of professional triumph will suggest it,—but above all, it will be adopted in acquittance of that sense of duty without the control of which, no operation should be undertaken.

Dublin Hospital Gazette, September 1, 1845, *p.* 17.

133—*Lithotomy in the Female.* By Professor Syme. Mrs.——, aged 45, from Wick, was admitted upon the 10th of June, on account of stone in the bladder, from which she had suffered the usual

symptoms for ten months. On the 12th, after *dilating the urethra by the successive introduction of bougies, gradually increased in size, I passed my finger into the bladder, and divided the ring at its orifice* outwards and downwards, by means of a straight bistoury. This incision was of very small extent, hardly exceeding the breadth of the blade, which was rather narrow. The textures then readily yielded, so as to allow me, without the use of violence, to introduce the forceps, and extract a stone about the size of a chesnut. Not the slightest inconvenience followed the operation. The patient regained the power of retaining urine in the course of eight days, and returned home quite well on the 23rd.

Lithotomy in the female affords an instructive illustration of the principle on which this operation may be performed with safety on the male. The parts are nearly in the same state, so far as the obstacles to extraction are concerned, as those of the male after the incision of the perineum has been completed, and as if the prostate were also completely divided. However much the facility and rapidity of the operation may be promoted by cutting instead of tearing the textures thus far, it does not appear that the choice of these means materially affects the patient's chance of recovery, provided the opening from the skin to the prostate be made sufficiently free. But in both sexes, there is still an obstacle remaining which admits of ready removal by incision, and cannot be overcome by tearing without almost certain death. This is the sensitive ring which surrounds the neck of the bladder, at the base of the prostate in the male, and at the corresponding part in the female. Bilateral and extensive incisions are altogether useless and improper, since the space required is obtained not directly through the extent of parts cut, but by the yielding of the textures through tearing and separation of their fibres, after the unyielding ring has been divided.

In dilating the urethra, to accomplish any of the purposes which require its capacity to be temporarily increased, I find no means so convenient as the introduction of bougies. This may be done in rapid succession, so as to attain the object in a few minutes, without causing any pain whatever.

Monthly Journal of Medical Science, Oct, 1845, *p.* 727.

134.—*On a Rare Form of Hydrocele.* By James Syme, Esq, Professor of Clinical Surgery, Edinbro'. [J.D., aged 24, admitted into the hospital for enlargement of both testicles, hydrocele, and ulcerated scrotum, attributed by the surgeon who sent him in from the country, to improper excitement of the generative organs. The difference between the sides of the scrotum was slight; the left side was solid from the testicle, which was swelled to the size of a small fist whilst about half the right was fluid.]

On examining the hydrocele more particularly, I felt that it could be diminished by pressure, and therefore made the patient take the horizontal posture, when it became very evident, that the swelling extended into the abdomen, so as to form a well defined oval tumor, obvious to sight and touch, ascending nearly to the umbilicus. A

slight degree of pressure emptied the scrotal part of the bag, rendering that within the abdomen more tense; and when the latter was compressed, or the patient stood erect, though the abdominal tumor did not disappear, it became less distinct, while the external one became more fully distended. When the two parts of the swelling were compressed alternately, a distinct fluctuation was perceived between them.

[The natural state of the testicles was soon pretty much restored by potassæ hydriod. and the use of a bougie, but the hydrocele remained in statu quo. This was then punctured, and 28 ounces of fluid drawn off, but so rapidly did it accumulate again, that in ten days the operation had to be repeated. Iodine injection was then thrown up, and the fluid did not form again.]

This case derives interest, not only from the extreme rarity of the form in which the disease presented itself, but also from the light which it throws upon another morbid condition of more frequent occurrence. It is plain that the hydrocele occupied the cord, and not the tunica vaginalis—since, in the latter situation, the fluid would have surrounded instead of lying, as it did, entirely above the testicle; and if it had had access to the cavity of the peritoneum, would not have been circumscribed within the limits of a distinct tumor. In a patient, whom I saw with the late Mr. George White, for ascites with double hydrocele, the fluid of the different cavities communicated through a narrow passage in the inguinal canals, and I evacuated the whole, amounting to several gallons, by tapping one of the hydroceles. The water must here have been contained in the vaginal processes, which had retained their original communication with the peritoneum. But in the case above related, the abdominal part of the swelling must have been seated in the cellular texture enveloping the spermatic vessels, and externally to the peritoneum. Now, hydrocele of the cord is frequently met with during infancy and early childhood, when it is very apt to be mistaken for rupture, in consequence of the testicle being felt lying quite free at the bottom of the tumor; and the risk of this error is greatly increased, when, as occasionally happens, the tumor diminishes or disappears upon being subjected to pressure, or when the patient is in the horizontal posture. But it is especially to guard against the erroneous diagnosis which thus results, that the present case seems to deserve attention; as it shows, that in hydrocele of the cord, accommodation for the fluid may be afforded within the abdomen, and renders it probable, that what was thus ascertained to take place on a large scale, may be of less unfrequent occurrence to the smaller degree requisite for explaining the temporary disappearance of the swelling caused by hydrocele of the cord, through the influence of pressure or the horizontal posture.

Monthly Journal of Medical Science, Oct., 1845, *p.* 725.

135.—*Case of Fungus of the Testicle Treated by Professor Symes' New Method.* By James Duncan, Esq., M.D., &c. [In Retrospect, Vol. XI., Art. 69, we noticed a new mode of treating fungus

of the testicle, by Professor Syme, founded on the anatomical structure of the parts. The question still remained to be decided, whether the diseased testicle thus treated would be able for the future to perform its functions, and this could only be decided by such a case as the following, related by Dr. Duncan, where the patient had lost the other testicle.]

A. S., aged 28.—Admitted into Royal Infirmary, March 30th, with fungus of the left testicle. The protruded portion is about the size of a large walnut, and appears to include the greater part of, if not the entire, testis. It is softish in consistence, and otherwise presents all the characters so well described by Mr. Lawrence.

The disease commenced about four months ago. The testicle became painful and swollen. The swelling increased, until it had attained the size of his fist. The scrotal integuments then became adherent, and in about two months gave way, discharging a small quantity of purulent matter. The fungoid protrusion, for which he was admitted, then formed, and from that time the pain greatly diminished. Small superficial sloughs have occasionally been detached from the fungus.

The right testicle has been diseased at a former period, and no trace of it now remains. The patient has been in bad health for several years, and has been repeatedly salivated for the treatment of syphilis.

An elliptical incision was made around the fungus, and extended upwards and downwards, the integuments were raised and brought over the growth, and retained by several stitches. This was accomplished with great facility.

Some degree of inflammatory œdema followed the operation, but this quickly subsided, after puncturing the integuments with the lancet, and fomentations. On the third day, the sutures were cut, and support given by means of several strips of adhesive plaster. Partial union only, by the first intention, took place, but there was, notwithstanding, no disposition in the fungus again to protrude.

The patient left the house on the 10th of May, the wound having been for some time completely cicatrised.

In this case we had that combination of circumstances already alluded to, which alone could throw any light upon the point in dispute; and I was consequently anxious to ascertain the state of matters, in regard to the sexual desires. On inquiring of the man, he assured me that his feelings in that respect were unimpaired, and as strong as they were two years previous to the existence of the disease in either testicle; and from a communication which we have subsequently had from him, we were rather inclined to believe that these powers had been tested.—*Northern Journal of Medicine* for June, 1845.

[When in Glasgow a few days ago, we saw, in the Royal Infirmary of that city, under the care of Dr. Lawrie, a case in which this operation had been performed with complete success. The

patient, a lad of 23, had been kicked on the scrotum twelve months before. Suppuration, ulceration, and protrusion of the whole anterior and inferior portion of the left testicle followed; the surface and a great part of the substance of the fungus appearing to consist of yellow strumous deposit. On the 12th May, Mr. Syme's operation was performed; and on the 25th, the patient was so well as to be anxious to return home, but was prevailed on to remain a few days longer, that the cicatrization might be more secure. Dr. Lawrie remarked to us, that where the skin was most deficient, and with the greatest difficulty made to cover the protrusion, *there* the cure was soonest, and apparently most securely effected. The case was altogether a most satisfactory testimony in favour of the new method of treating fungus of the testicle.—*Dr. Cormack.*]

Monthly Journal of Medical Science, July, 1845, *p* 537.

136.—*On the Treatment of Diseased Prostate.* By W. Colles, Esq., Surgeon to Stephens' Hospital, Dublin. [Acute abscess of the prostate, and malignant degenerations, having been already so fully described, Mr. Colles passes them by, to come to the consideration of chronic enlargement of this gland, particularly with regard to the degree of firmness and consistence, which he thinks have been too much overlooked.]

In the majority of cases, the texture of the enlarged gland is very solid and firm, smooth on the surface, that is, devoid of knobs or projections. For this description of case I have not any remedial treatment to suggest. But there is a description of enlarged prostate in which surgery can render essential benefit to the sufferer, and that by a very simple operation. When we find a patient in advanced life, complaining of unusual frequency of micturition, with more than ordinary straining, his urine depositing a good deal of muco-purulent sediment, and possibly a muco-purulent discharge from the urethra, we should make a very careful examination of the state of the prostate. If, under these circumstances, we introduce the finger into the rectum, and find the gland enlarged in either lobe, and upon pressing on one particular spot, we feel the point of the finger sink, as into a cavity; and particularly if we find this pressure to cause the discharge, per *urethram*, of a quantity of this purulent fluid, to the amount, varying from a few drops to a teaspoonful; here we may hope to render an essential service. The operation to which I allude, is simply that of striking a lancet into this hollow, soft spot, which will generally be found to contain some matter. Now, as such an operation cannot be conveniently or securely performed by the common lancet, I have employed the pharyngotome, having previously adjusted the instrument, so as to allow the lancet to project only to a length, varying from one-eighth to one half an inch, according to the apparent thickness of this soft part, our object being to open into this cavity.

The operation will be found to cause very slight pain indeed, and that confined to the region of the wound; not even extending

(as we might have anticipated) to the glans penis. So trifling and so momentary is the pain, that I have at different times performed the operation, and the patient merely imagined I had pressed a little more rudely on the gland. We are guided to the spot where the puncture is to be made, by holding the point of the forefinger of the left hand gently pressed on the soft part, and introducing the instrument on this as on a director.

In some of these operations I have had incontestible proof that some pus had been contained in the cavity, for I have found it on the blade, and in the sheath of the instrument, yet in no instance have I been able to discover, afterwards, any trace of matter discharged by stool, so small has been the collection of this fluid; in some of the patients a few drops of blood have passed afterwards through the urethra. In one or two, some urine has passed for a time by the rectum; the quantity, however, was, in general, very inconsiderable, but often sufficient, by its presence in, and irritation of, the rectum, to cause the patient to go to stool, though no fæces were in the rectum.

This occasionally watery stool was at once the only proof and inconvenience attending on such cases. This escape of urine, however, gradually ceases in the course of a week or two, never to return.

I must acknowledge, however, that in one case which will be hereafter mentioned, the flow of urine into the rectum was much more troublesome, and to a greater amount, so that at one time I was in dread lest the communication should become permanent, and a fistula formed. Yet, even in this case, an old sickly poor man, according to the last report, there has been no discharge of urine from the rectum for some time, it having gradually ceased after his leaving the hospital.

In one instance only have I seen a hæmorrhage follow this operation, and in that it was easily commanded by laying on the orifice a small compress of lint, and retaining it, for some minutes, firmly pressed against it by the forefinger introduced into the rectum.

[These remarks are followed and supported by several interesting cases. In one, a fistulous communication appeared to have formed between the bladder and rectum, through the prostate. This, however, closed after a time, and the man was much benefited by the operation, as might be expected, when we remember the frequency with which such communications are intentionally made, as in lithotomy, &c., and which seldom fail to heal. There can be no doubt that such direct communications close much more readily than when there is only a tortuous sinus for the urine or pus to escape through. Should we not be justified in adopting this plan in fistula in perineo arising from this disease of the prostate, and which has resisted other methods of cure?

How does this operation act in affording such considerable relief in these cases. It can hardly be on the same grounds as the open-

ing of a common abscess, because, though pus may be found on the lancet, it is never subsequently seen.]

Another explanation that offers itself is, that the incision relieves the tension of the membrane or fascia investing the gland, and allows the free expansion of the parts beneath, as we find in other parts suffering under inflammation, and bound down by a fascia, that a free division of this membrane affords the greatest relief, and puts a stop to the progress of the disease, both local and constitutional; still this explanation is not quite satisfactory, for we find the spot soft and yielding, and it is merely into this point we make our incision. Yet, in whatever way we may attempt to account for it, it is not of so much consequence.

Dublin Journal of Medical Science, July, 1845, *p.* 372.

137.—*Use of the Caustic Bougie in Gonorrhœa.* By J. P. M'Donald, Esq., Bristol. [There can be no doubt that copaiba is a remedy of great value in gonorrhœa, but we have often wondered that local remedies have not been more used in so purely a local disease. Mr. M'Donald has tried the following remedy with great success.]

The remedy I refer to is that of smearing a bougie with ointment of the nitrate of silver, introducing it into the urethra for about three inches, and letting it remain there a minute or two. I have found from two to three applications complete the cure, and if in the very acute stage of the disease, one application is generally sufficient. This mode of treatment is equally applicable in all stages of gonorrhœa. The following two cases will be sufficient as illustrations.

J. B——, mate of an American ship, applied to me to be treated for gonorrhœa in the acute stage; the discharge had commenced about three days previously, accompanied with the usual scalding during micturition. He had purged himself thoroughly, lived low, kept his bed, and taken small doses of balsam of copaivi and sweet nitre; but the symptoms had so much increased in severity that he sought my advice, when I found the glans penis intensely red, the prepuce swollen considerably, the discharge green, mixed with a little blood, and he described the scalding as the "passing of boiling lead along the urethra."

I ordered him to remain in bed for that day, take plentifully of mucilaginous drinks and the following draught every six hours;—gum arabic mixture; copaivi; solution of potass; tincture of hyoscyamus, for a draught; and to apply lotion to the prepuce.

The following day I found him no better; he complained of being worse. I then introduced the bougie, smeared with the nitrate of silver ointment as before described; the pain was excessive for about half an hour after it had been withdrawn, but it then subsided entirely. He continued the mixture. The next day, *the scalding had entirely ceased*, and he could pass his urine free from all pain, the discharge was much diminished and of a light yellow colour, the glans had assumed its usual appearance, and the swelling of the prepuce had in a great measure subsided. I ordered him

a good diet, but to avoid all spirituous or fermented liquors; he continued the mixture; the ointment was again applied. The next day, the discharge had ceased, but he complained of chordee at night; this was remedied by ten grains of Dover's powder, and a leech or two. For several days after, he was busily engaged in getting his ship ready for sailing; he used very violent exertion and lived altogether imprudently; the consequence was a slight return of the discharge but *no scalding*; another application of the ointment, however, checked this and he left Bristol perfectly cured at about the tenth day from my first seeing him.

T.P—— had gonorrhœa for three weeks, during which time he was treated by a chemist and druggist with copaivi and cubebs. The disease remaining *in statu quo*, he applied to me for further advice. I used the nitrate of silver ointment as in the last case, and in twenty-four hours after, when I next saw him, the discharge and scalding had ceased. Although, in both these cases I used balsam of copaivi, and am willing to ascribe to it some portion of the cure, still, the gentleman at whose suggestion I used the nitrate of silver ointment, in the manner described, informs me that it is equally successful when used alone, as when medicines are exhibited at the same time.

I believe injections of the solution of nitrate of silver, (ʒ ss to ʒ j) have been used with great success in gonorrhœa, but I infinitely prefer the ointment introduced on a bougie, as I think it is the better means of getting the nitrate of silver more thoroughly in contact with the lacuna magna, which is generally considered to be the principal seat of the disease.

Lancet, Nov 1, 1845, *p.* 477.

138.—*Treatment of Venereal Warts.* M. Vidal (de Cassis) recommends for this purpose the application of a powder of equal parts of alum and savin, afterwards increasing the proportion of alum to two-thirds. This is applied twice a-day, the parts being previously moistened with equal parts of water and aromatic wine. If the glans is naturally covered by the prepuce, in returning the latter, the powder is retained in its place. If the glans is not covered by the prepuce, a simple dressing, such as a piece of dry lint, ought to be employed. By the contact of this powder, the vegetations dry up, shrivel, and lose their adhesion, so that they crumble off without any pain.—Archives Générales de Médecine. Juillet 1845.

Northern Journal of Medicine, Sept. 1845, *p.* 239.

139.—*Transmissibility of Syphilis.* In a late number of "Casper's Wochenschrift" is an article by Dr. Rusker, which bears directly on an interesting question lately mooted in this country by Mr. Acton. Dr. Rusker states:—I have met with two examples in children of hereditary lues, where the formerly syphilitic father, who for a long time had had no symptoms of the disease, "produced" two children with evident symptoms of the inherited disease, notwithstanding the mother was strong and perfectly healthy, and had

never perceived any trace of the disease, either before, during, or after pregnancy; the children when born were very weak and small, almost in a consumptive state, and had swelling or thickening of the nasal mucous membrane, producing a peculiar noise in respiration, which is called "snuffles," an almost constant symptom of the disease. Copper-coloured eruptions next appeared on the skin, and, in one case, large bladders, containing a yellowish fluid, which covered almost the whole body, especially the back and abdomen. The author adds—"These cases prove that the 'seed' of a father affected with lues can communicate the disease to the child, without the mother being affected. When the mother is suffering from syphilis, I have found, in infected children, ulcers and pustular eruptions more numerous; moreover, they are then in good condition, but constantly are affected with snuffles. Regarding the treatment, I have attempted to cure the disease of the 'suckling' by giving mercury to the mother so as to affect the milk, but without success. The cure was effected, however, by giving calomel to the children for some time."

Lancet, July 26, 1845, *p.* 111.

140.—ON SPERMATIC DISCHARGES.

By Benjamin Phillips, Esq., F.R.S., &c.

[In Retrospect Volume VII, page 164, we gave an abstract of some interesting practical remarks on seminal discharges, by Mr Phillips. He has lately published some further remarks on the same disorder, derived from increased experience in its treatment. From these we now extract the following observations.

It frequently happens in these cases, that after passing urine, a drop or two of viscid fluid escapes. This loss usually produces "severe mental depression, often amounting to absolute hypochondriasm." The patient is greatly alarmed, and it is useless to attempt to reason him out of it. The treatment should be simple, and have reference more to moral habits than physical disorder.

Mr. Phillips regards these cases in a much less serious light than many surgeons. He has found them extremely simple and easy of cure, when the practice of masturbation is discontinued, and the mind can be directed to other objects.]

The way in which I explain this kind of discharge is as follows. A large number of lads soon after puberty inflame their minds by reading lascivious books, from which they derive images of sexual pleasures. A large number also, are early taught the practice of masturbation. Under both circumstances, the gratification derived by contemplating the image, on the one hand, and by the physical excitement, on the other, keeps up a constant irritation. The testicles, instead of enjoying moderate rest, are incessantly stimulated by the dream at night, the mental or physical stimulus during the day; the secretion is constant, the seminal vesicles are distended and unless the ejaculation takes place with sufficient frequency to

relieve them, the fluid must escape by some other means; and the pressure upon them during the efforts at stool, or in making water, squeezes out a certain quantity of the fluid by which they are distended, and it usually escapes with the last drops of urine.

At one time I doubted whether this fluid were spermatic, it is usually so smooth, transparent, and homogeneous; but if it be examined under the microscope, spermatozoa can usually be observed in it. Its thin fluid character has induced some people to think that it was a depraved secretion, become watery by exhaustion of the secreting organ; and sometimes it may be so, but usually it is not so; for if a person who complains of the constant escape of the thinner fluid has an ejaculation, the fluid will be thick and grumous. It is therefore most probable, that the more fluid portion of the secretion which fills the seminal vesicles is most easily pressed out; and this is a reasonable explanation of this particular feature of seminal discharges.

To cure this symptom, all that is necessary is to keep the testicle quiet, by substituting new images for the prurient fancies which have occupied the mind, and to empty the vesicles occasionally by sexual intercourse; and for this class of cases I think marriage is the best cure. It is true, it is not easy generally to make the persons who thus suffer think so; they believe that their sexual power is destroyed, and that intercourse must be impossible—that their impotence is complete; but spite of such impressions, I have never hesitated in such a case to recommend marriage as a cure. You may be met with the observation, that intercourse has been attempted, but that it had failed—the erection was insufficient, or the ejaculation premature. These things in no wise alter my opinion, because where a person casually attempts intercourse as a means of testing his powers, but with the impression strong on his mind that he shall fail, he does fail; and therefore I dissuade patients from having recourse to these tests. But if a man be married, he ultimately gets rid of that nervousness which may at first have rendered him powerless, and he ultimately succeeds; and a single success gets rid of the mental impression which prostrated his bodily powers.

It is astonishing, in these cases, how powerful is the influence of the mind in distroying the virile power. I was consulted by a man upwards of 40 years of age, who was at the time apparently in the best health, but who for twenty years had scarcely had an erection during perfect consciousness, though the sexual organs were pefectly well developed, and natural. His own account was, that there was no want of erection before twenty. To some extent he had practised masturbation, and emissions during lascivious dreams were not unfrequent. At that time he read Sauvages, where he found a passage containing, as he conceived, a statement that discharges occurring as his did lead to impotency. From that hour he has been practically impotent. On first waking in the morning, there is almost always complete erection; but the moment consciousness is perfect all erection ceases, and does not occur again till the next morning.

Supposing my view of such cases to be correct, it is clear that they would commonly right themselves; but so profound is the mental distress they occasion, so hopeless the condition of the mind, so complete the despair in many cases, that all reasoning is useless, and you are obliged to propose some plan of treatment, and the main point to be carried out is to convince the patient that matters will go right under the use of the remedy employed, but that many months are necessary for the purpose, and that even then, unless the habit of constantly looking for discharge, and dwelling upon the subject be discontinued, it is very likely it will fail.

In all cases, however, previous to recommending such a course, I am accustomed to pass a bougie along the canal once or twice, for the purpose of ascertaining whether or not it be in a natural state; because, if there be no increased sensibility in the vicinity of the verumontanum, my experience does not enable me to promise any very certain relief from the direct application of any agent. If there be much sensibility along the whole canal, and this is sometimes the case, it is often difficult to satisfy the mind as to the state of that particular portion of the canal. It then becomes necessary to pass a bougie more than once, to determine what we desire.

Even in cases of this class, if there be very excited sensibility at the point in question, great good is usually derived from the use of caustic; and, indeed, there are few cases of sexual debility which are much improved by the use of caustic, unless such abnormal sensibility be present.

Medical Gazette, May 2, 1845, *p.* 17.

141.—*Treatment of Spermatorrhœa, by Compression.* [Dr. Brachet of Lyons, has cured four cases of involuntary loss of semen from different causes, by compression of the prostate gland.]

He admits however, that pressure cannot be employed indiscriminately in every case, and that often in removing the cause we cure the disease, but he thinks that it will succeed in all cases of atony, produced by venereal excesses, onanism, or blenorrhagia, if they last long and are frequently repeated. He seeks to demonstrate that the injurious effects of spermatorrhœa are owing to the loss of the seminal fluid, and that in consequence it ought to be prevented by every possible means, to the augmentation of the sacretion of the prostatic fluid, which he considers similar to that secreted by the follicles of the vagina during coitus, and in some cases of leucorrhœa. As to the effects produced by compression, in his opinion they are of two kinds; in the first place it keeps the seminal fluid in its reservoirs, which are thus accustomed to its contact and enabled to retain it longer; secondly, it modifies the physiological condition of the urethra, the prostate, and excretory organs of the semen. It is thus that a cure is obtained, that is to say by modifying the pathological state of the diseased organs, and causing them to return to their normal condition. Finally the author gives a description of the bandages by which he exercises pressure; it is composed of a waistband in leather, the extremities of which unite

on the abdomen, from its centre posteriorly descends a strap which on reaching the genital organs bifurcates, and finally is buckled in front to the preceding: it is on the latter that a small cushion is placed opposite the part on which pressure ought to be made; and he concludes by stating the advantages it presents over the other methods recommended.

Medical Times, May 24, 1845, *p.* 141

142.—*New Form of Catheter.* By M. Leroy D'Etiolles. [M. D'Etiolles recommends, instead of the ordinary shaped flexible catheter, that the curve should be made very short and abrupt. He says that certain obstacles which produce complete retention of urine, and prevent the passage of common sounds or catheters, yet yield immediately when such are used]

This form of sound is applicable to many states, in which urinary obstructions sometimes occur; as, when a bridle imperfectly closes and deforms the canal;—when a small stone is detained behind a narrow portion of it;—when the verumontanum and crest of the urethra, being enlarged, form a central projection dividing the termination of the canal into two more or less tortuous passages;—or when a stricture coexists with hypertrophy of the prostate, morbid development of one of its lateral lobes, and a transverse fold at the entrance of the neck of the bladder. Let us take this last supposition, and see what must happen to instruments of different kinds.

We will imagine that a straight sound, or one of large curvature having passed the stricture, arrives at the commencement of the prostatic region; there it finds the canal turned aside, and strikes against the projection formed by the outer lobe. If the sound, though flexible, is straight, and thick also, there is no possibility of giving it a lateral inclination, that it may take the direction of the urethra;—if metallic, it may perhaps by a lateral movement of the extremity enter the distorted portion, and while straightening it, effect a passage; but not without violence to the urethra, proportioned to its degree of deviation;—if the sound is flexible, with a great curvature, and the divergence of the canal not too abrupt, the beak of the instrument may perhaps enter; though if the deviation is sudden, it can hardly do so; for the sound to pursue such a track must have an abrupt curvature too.

This sharp curvature ought, at the same time, to be short; for the swelling of the lobes of the prostate may alternate, and dislocate the urethra, first to one side, and then to the other; it is therefore of consequence, that the sound incline to right and left, in exact conformity with these different inflections, like the keys of some modern locks, which we first push in one direction, and to which we then give a quarter-circle rotatory movement to continue their progress. The short abruptly-curved sound should likewise be flexible; for, if the projection of the two lobes of the prostate be alternate, it must bend twice, in order to follow that double deviation, and continue to advance; and, admitting that the extremity

of a metallic hooked sound should pass the second deviation, the projections must, in that case, be violently thrust to right and left, to give the instrument a straight course.

Lastly, the curvature, though abrupt, must not approach a right angle; because this portion, placed in its progress transversely to the direction of the urethra, would cause painful distension; in the moveable parts of the canal, neither pain nor resistance arises by such crossing of direction; but beyond the bulb it is otherwise; for the membranous and prostatic portions cannot undulate like the spongy body, the sound separates their anterior and posterior walls rubbing with its heel against one, with its beak against the other, through the whole track, for the middle of the membranous portion to the neck of the bladder. When the prostate is indurated and hypertrophied, it yields with difficulty to such distention; and this explains why metallic sounds of short sharp curvature (preferable to all others, as my friend Heurteloup and I have shown, for exploring the bladder) have so much difficulty in penetrating that that viscus when the prostate is enlarged (*engorgée*).

Medical Gazette, Aug 1, 1845, *p.* 585.

143.—*New Mode of Treating Urethro-Vaginal Fistula.* [We have before noticed Mr. Brooke's account of his bead-suture, the use of which is well illustrated by the subjoined case. The patient, who is married, contracted gonorrhœa from her husband about four years before, and has had tumefaction of the genitals since that time. Eight months before the urine began to escape involuntarily; this went on increasing, till at the present time the whole passes by the vagina. On examination by speculum, the vaginal structures were found thickened, and a fissure, commencing about an inch from the urethral orifice, extended in a direction rather obliquely to that of the urethra for rather more than an inch, and communicated with the canal. The operation was thus performed:]

After lightly touching the edges of the fissure with potassa fusa, Mr. Brooke introduced three of his bead sutures (a description of which has lately been before the profession), by which the edges of the fissure were very accurately held in apposition. An elastic gum catheter was subsequently introduced into the urethra, and retained there by a T bandage, to prevent the urine from accumulating in the bladder, and insinuating itself between the edges of the fissure.

Mr. Brooke preferred the application of potassa fusa to paring the the edges with a scalpel, on account of the extreme difficulty of removing the whole of the mucous surface by the latter means; if any portion, however small, were left, union could not of course be obtained. After the application of potassa fusa, the union must necessarily take place by granulation, and not by adhesion: it was however, observed to be the peculiar advantage of this suture, that the parts united by it might be retained in apposition, without its cutting through or producing irritation, for a time amply sufficient to complete union by granulation. Mr. Brooke stated that in

one similar case in which he had successfully applied this method, the sutures had remained for a fortnight, and in another for three weeks.

The speculum made use of in this operation is of a novel form, and extremely well adapted to the purpose for which it was contrived. It consists of a cylindrical tube closed by a rounded end: the handle, which is held towards the pubis, is turned up at right angles to the tube, in order to allow a catheter to be introduced through the speculum into the urethra, if required as a guide to the depth to which the needle should penetrate. An aperture is made near the closed end of the tube, large enough to allow the edges of the fissure to project into the interior so as to be under the command of the needle. The opposite side of the cylinder towards the fourchette is cut off obliquely as much as possible, and furnished with a lip to prevent the fourchette or carunculæ being nipped by the finger or the handle of the instruments.

After the beads were sufficiently approximated, the knots were placed on the free ends of the threads by a very ingenious apparatus: it consisted of a small conical roller placed obliquely at the extremity of a handle, by which a loop made at the end of the thread was run up close to the bead; the loop was then drawn tight by means of a small forked instrument, the notch in which was just wide enough to admit the thread.

Medical Times, August 2, 1845, *p.* 355.

144.—NEW OPERATION FOR THE CURE OF VESICO-VAGINAL FISTULA.

[The name of M. Jobert has long been honourably connected with the operation for vesico-vaginal fistula. He bestowed upon it the name of elytroplasty; his mode consisted in closing the fistulous opening by a flap borrowed from the external parts. By this means he has succeeded in curing this distressing disease, which was formerly supposed incurable, in many cases is still thought so. He has also in one case, and in the following two cases, cured the disease, even when there was a free communication between the bladder and vagina.

The late case is as follows: the patient in 1841 was delivered easily of her first child. Five days after, incontinence of urine appeared, and on the seventh day it passed entirely by the vagina. She was first under the care of M. Breschet, then under M. Velpeau but both declined operating, considering the case incurable.

She afterwards put herself in the hands of M. Jobert, who attempted his usual operation, but, owing to gangrene of the flap it was unsuccessful.]

A year afterwards, (March 1845,) she again applied to M, Jobert, and was again admitted. Intending to try another operation, for which it was necessary that there should be a resting point in front, M. Jobert first directed his attention to the restoration of the infe-

rior parietes of the urethra, which, as we have stated, was entirely destroyed. This was partly effected, by means of a flap taken from the external parts, and a kind of bridge formed from one lip to the other of the fistulous urethra, about two thirds of an inch in breadth. The urethra having been thus partly reformed, the patient was found to be in the following state:—The vesico-vaginal fistula were on the median line, directed from behind forwards, parallel to the axis of the vagina, and of an elliptical shape. It began one centimeter and a half from the uterine neck, and terminated at the restored urethra; occupying consequently, part of the urethra, the vesical neck, and the vesico-vaginal parietes. The transversal diameter was less than the antero-posterior; three fingers could be introduced with ease into the bladder. The margins of the opening were not indurated, nor incrusted with calcareous deposits. There was no vaginal retractions nor cicatrices. The interior of the bladder appeared smooth and healthy, and did not protrude into the vagina. The urine passed entirely by the vagina. The patient was in perfect health, and anxious to be operated upon. Seeing that the elytroplastic operation could not be expected to succeed where the loss of substance was so considerable, M. Jobert fixed upon another plan. He determined to elongate as much as possible the remaining portion of the anterior vesico-vaginal parietes, and then by approximating the lips of the vesico-vaginal fistula as far as the restored urethra, to unite the whole with sutures.

On the 9th of June, the operation was performed as designed. The patient having been laid on her back, in the lithotomy position, the pelvis was brought to the edge of the bed and directed forwards, the thighs being supported by two assistants. Museaux's forceps were then inserted into the neck of the uterus, which was, with their assistance, drawn down to the vulva. The operator then made a transversal and semicircular incision above the anterior lip of the cervix uteri, in the sulcus formed by the insertion of the anterior vaginal parietes on the uterine neck. Carrying the bistoury subsequently from the cervix uteri to the posterior region of the fistula, he separated from the vagina on each side that portion of the anterior vesico-vaginal parietes which remained, and which, as we have stated, was only a centimeter and a half in width, antero-posteriorly. On drawing forwards the portion of the vaginal parietes thus dissected, it was found to diminish considerably the antero-posterior diameter of the fistula.

The lips of the vesico-vaginal opening were then freshened by the bistoury, approximated to each other, to the posterior flap, and to the restored urethra, and united by sutures. Thus the opening was obliterated by what remained of the anterior vesico-vaginal parietes, separated from the surrounding tissues, and made to slide downwards, by the lips of the fistula drawn together, and by the restored urethra. The vagina and the bladder, which previously constituted a vast cloaca, after the operation, were perfectly separated by the artificial parietes. A piece of agaric, covered with ointment was placed in contact with the restored tissues, and the vagina

moderately plugged with lint. A gum-elastic sound was then introduced into the bladder by the new urethra, and allowed to remain, so as to give free exit to the urine.

On the 11th, no untoward symptom had occurred; the menstrua appeared; the urine passed entirely through the sound. On the twentieth day after the operation, the patient got up. On the 15th of July, M. Jobert examined his patient, and found her in the following state:—In front of the uterine cervix, and on the superior part of the anterior parietes of the vagina, there was a decided elevation, formed by the flap separated from the adjoining parts. Anteriorly to the flap, was perceived a thick and solid cicatrix, representing a sulcus, directed longitudinally, which indicated where the lips of the fistula had united. In front of this sulcus was a small depression, constituted by an opening just large enough to admit a female catheter. This opening was situated on a level with the normal vesical neck. The catheter introduced into the bladder could be made to execute extensive movements, thereby proving that no retraction had taken place. The woman was able to retain her urine for several hours, and voluntarily to satisfy the want when it manifested itself. In walking, she could also retain her urine, but not so easily. She left the hospital, but has since been again examined by M. Jobert, who found the cure as perfect as at first.

Before M. Jobert undertook this operation, he instituted a series of researches on the dead subject, in order to ascertain the exact relation that the peritoneum, which is reflected from the posterior surface of the bladder on the anterior surface of the uterus, assumes, with relation to the sulcus or vaginal cul de sac above the cervix uteri. He constantly found, after incising the mucous membrane and the dartoïd tissue, which constitute the vagina, a filamentous cellular tissue uniting the fundus of the bladder to the vagina; higher up, also, a lax cellular tissue, which allows the bladder to be pushed forwards so as to enable the operator to ascend some distance between that organ and the uterus, without injuring the peritoneum. The peritoneal cul de sac is separated from that of the vaginal cul de sac or sulcus, by a distance, not of ten lines, as has been said, but of fifteen. There is, therefore, no risk of injury to the peritoneum in the operation above described.

Lancet, Sept 6, 1845 *p.* 254.

145.—*Remarks on Utero-Vesical Fistula.* By Isaac Harrinson, Esq., Surgeon to the Reading Dispensary.—[Mr. Harrinson has met with a case of a disease mentioned in books, but not described as utero-vesical fistula. The patient was 41 years of age, and had been delivered of her last child, the seventh, five years before. The labour was severe and protracted, and instrumental aid required to complete it. Retention of urine followed, for which the catheter was required for thirteen days. She then felt something give way,—and the urine flowed away, and continued to do so for upwards of five years.

The horrors of her condition during this period are indescribable. Day and night the urine dribbled away; not a drop passed through its natural outlet; while the quantity of secretion was augmented by the constant irritation. Sleep was almost denied her; three or four times a night had her dripping garments to be changed.

On repeated examination by various surgeons, no fistulous opening could be discovered, and incontinence from weakness was therefore supposed to be the cause.

Mr. Harrinson, suspecting the cause, examined her with the greatest care, but without success. But one day exploring with a catheter in the bladder, concavity downwards, and a finger in the os uteri, the two came into contact. A communication between the fundus of the bladder and the uterus was thus discovered, large enough to admit with ease a No. 6 male catheter.

The account of the treatment, and the ingenuity with which the various difficulties were met, we give in his own words.]

It occurred to me to inquire what would be the effect of a skein of silk passed through the opening, allowed to remain there a certain time, temporarily to stop, and produce a degree of inflammation sufficient permanently to close its orifice. And also, whether this desirable termination would not be most materially facilitated, when that irritation had been produced, by withdrawing the threads one by one, with a few days' interval, that the orifice might gradually contract around the threads. That they should be reduced in size also, as well as number; so that at last there might be nothing left to contract around, and the orifice be entirely obliterated.

The more solid tissue of the uterus, rather than the lax texture of the vesico vaginal septum, perhaps favoured the attempt; while the facility of imbuing the threads with any triable sanative application increased the possibility of success. The objections to such a mode of proceeding appeared to be, that the threads might produce in the bladder intolerable irritation; in the uterus, dangerous and intractable irritation.

A circumstance however occurred, which encouraged me to proceed. By my last examination considerable irritation was produced, and for the first time for five years, she remained dry for two hours; no dribbling took place, and she then passed water in a stream. This arose, I imagine, from the tumefaction of the edges of the fistula, producing temporary closure of its orifice.

With this end in view, therefore, on the 14th of July, 1841, I proceeded to operate in the following manner:—A Brodie's catheter, armed with a long piece of twine, was introduced into the bladder, concavity downwards, and being guided by a finger within the os uteri, I readily found the rupture, passed the instrument through into the vagina, seized the thread, and then withdrew the catheter; thus leaving one end of the twine hanging from the urethra, and the other from the vagina. To the urethral extremity I tied a skein of six threads of glover's silk,

oiled them, and drawing at the vaginal extremity, dragged the silk through the fistula, and then tied the urethral and vaginal ends together.

The result was most gratifying. From the time of their introduction to the withdrawal of the last thread no dribbling took place, except when using some extraordinary bodily exertion, and under these circumstances it did sometimes occur; therefore, when I say *no dribbling*, I beg it to be understood with this qualification.

On the fourth day from the operation, irritation beginning to be produced, I withdrew the first thread; on the fifth, the second; on the sixth, the third; on the tenth, the fourth; and on the seventeenth, the fifth, leaving only one remaining. So that in seventeen days the operation may be said to have been completed.

[During the three subsequentmonths, the size of the thread was changed three times, until it was reduced as small as was compatible with strength and durability.

Mr. H. now endeavoured to close the orifice entirely. He therefore withdrew the last thread, just after the irritation of the menstrual period had ceased, when it seemed probable that ultimate union would take place, if ever it did. The experiment was unsuccessful; in twenty-five days the dribbling was as bad as ever, and he was compelled to introduce four large threads, which were soon reduced to one, which she still wears. No inconvenience is produced by it; it merely requires to be drawn down once a-day to cleanse it, and for the last three years, by the use of this simple remedy, not a drop of urine has escaped.]

Provincial Medical and Surgical Journal, June 11, 1845, *p.* 372.

146.—CURE OF URINARY FISTULA BY THE TALIACOTIAN OPERATION.

By F. Le Gros Clark, Esq., Assistant Surgeon to St. Thomas' Hospital, Dublin.

[The author first points out the difficulty of curing urinary fistula generally, and especially of such as are situated anterior to the scrotum, and quotes the experience of Professor Dieffenbach to this effect. Then, on comparison of the different methods adopted, he gives the palm to that which consists in renewing the lost structure by a plastic operation.]

The subject of the operation, in the present instance, was a wine-porter, who had permanent stricture, for which he was operated on by Mr. Clark in July last; but being of intemperate habits, and not very good constitution, he had acute inflammation of the testicle, followed by sloughing of the scrotum and penis, which, after the healing process was completed, left an aperture in the urethra one inch and a quarter in length, and occupying a small portion of the scrotal division of the passage, and extending forwards for a considerable distance anterior to it. The following were the steps of the operation for the closure of this opening. A small inverted

portion of skin was first dissected out from the scrotal extremity of the fistula; four incisions were then made, two of which extended downwards and outwards over the scrotum, and the other two upwards and outwards on the sides of the penis; a lateral flap was thus marked out on each side, which was then dissected up; and the two being brought together, *surface to surface*, over the fistulous opening, were maintained in that position by lateral splints of leather and sutures, passed through the latter and the skin. A semilunar incision was then made on each side, to relieve the anticipated tension when swelling came on. A full-sized gum elastic catheter, which had been passed prior to the commencement of the operation, was left in the bladder.

Adhesion took place throughout the whole extent of the flaps, except at two points, one being at the scrotal extremity of the fistula, the other between the lateral supports: these were freely touched with caustic, and soon closed. A small portion of the margin of one flap sloughed. The operation was performed in November; and at the present date (June 10th), the patient continues to pass his water freely, and in a full stream. There is no contraction of the penis, or any part of the passage, and the cicatrix is scarcely visible. The perineal opening still allows of the occasional escape of a drop of urine.

[The parts operated on so far recovered their natural appearance that it would be difficult to discover that any operation had been resorted to, though a few drops of urine occasionally dribbled through a small aperture inclosed in the perineum.

Mr. Acton thought this case illustrated the correctness of his remarks in his "Treatise on the Venereal Disease," that we must not expect success in urinary fistula till after repeated applications of the knife and caustic, as practised by M. Ricord.

He had seen the operation performed in a variety of ways; the most successful, however, being that detailed and figured by M. Ricord, in his *Clinique Iconographique*, in which an artificial opening was first made into the membranous portion of the urethra immediately behind the bulb, the urine being allowed to pass off through a gum elastic tube fixed in the opening; the edges of the fistula situated anteriorly to the artificial opening were then pared and brought together by means of pins, or a bougie introduced into the urethra. The fistulous opening closed after repeated applications of nitrate of silver, and in three or four months the artificial opening was allowed to heal, which it did most speedily.

[Mr. Brooke thought that by the use of the beads suture, as described in Article 143, the operation would succeed perfectly.]

Medical Gazette, June 20, 1845, *p.* 338.

147.—*Unique Case of Adipose Tumor in the Spermatic Chord.* By D. O. Edwards, Esq., Chelsea. [The patient, 43 years of age, in the autumn of 1842, discovered an enlargement in the left side of the scrotum. This was at first supposed to be hernial, but by careful

examination with an exploratory needle, the disease was considered to be confined to the spermatic chord. As the tumor increased in size, Mr. Edwards was consulted, and says:]

When I saw him he had an irregular oblong tumor in the left side of the scrotum, corresponding to the course of the spermatic chord, about four inches long, and in some parts as much as two inches in diameter; it had the doughy feel, characteristic of omentum in a hernial sac. The testicles were of natural consistence, size, and sensibility, and the spermatic chord could be traced a quarter of an inch from the testis, and then disappeared in the tumor; at the upper extremity of the enlargement, a thick chord-like substance extended into the abdominal ring, about the third of an inch in diameter. The testicle hung below the tumor, and the scrotum loosely about its contents. No efforts could dispel the seeming hernia through the inguinal canal.

[He considered the tumor to be irreducible epiplocele, but advised the patient to consult Mr. Lawrence. By him endeavours were made, but without success, to reduce the supposed hernia, and a suspensory bandage was directed to be worn.

In the spring of 1844 slight enlargement had taken place, and a change in form was perceptible. No effect resulted from the administration of iodine, which was used both internally and externally.

At midsummer, 1844, there was a manifest increase in size, though slight, and the tumor had assumed a lobulated form. The lobules were very hard, not unlike scirrhus, and insensible.

In April 1845 the tumor had enlarged to the size of a melon; the left testicle lay in front, and both spermatic chords could be felt in a sound condition. Mr. Travers was now consulted, and he convinced himself that the mass was unconnected with either abdomen or testicle, and advised operation. Sir B. Brodie and Mr. Lawrence, on examination with a candle, were convinced that it was not hernia, and agreed in recommending excision of the tumor.]

Mr. Lawrence thus describes the symptoms:—"Upon first view it would be pronounced a scrotal rupture. It was a pyriform enlargement occupying the whole left side of the scrotum, extending to the abdominal ring. The integuments and cellular tissue were perfectly natural. But a circumstance was immediately perceived at variance with the supposition of a rupture: the left testicle lay on the front of the swelling; it was loose and moveable on the mass; the chord could be traced a little above it, and was then lost in the tumor. When firmly grasped, the mass was found to be of an unequal consistence; portions were solid and firm, but the greater part was soft, so that I examined it with a candle, supposing it might contain fluid; there was no transmission of light. Judging from the mere manual examination, it might have been a large scrotal rupture, with various contents, principally omentum; or it might have been a tumor not of uniform consistence. It had the doughy feel belonging to omental rupture; and the omentum, when long out of the abdomen, becomes sometimes much enlarged, by the

deposit of fat in its texture, especially in corpulent persons, but this gentleman was thin. Although the swelling was continued upwards, careful examination showed that it had no connexion with the cavity of the abdomen; the chord could be felt free above, close to the abdomen. The conclusion was obvious; the swelling could not be a rupture, but I could not make up my mind as to its real composition. Although the nature of the disease was doubtful, there were no evidences of dangerous character, nothing to contra-indicate the operation of removal, which had become urgently necessary from the great bulk of the tumor, and its rapid rate of increase during the last few months."

[These three gentlemen, the most distinguished pathologists in London, now met the patient together in consultation, and their opinion was unanimous in favour of extirpation. Accordingly]

On the 30th of April, Mr. Lawrence, assisted by Mr. Travers removed the diseased mass. The first step was an incision into the swelling. Two elliptical incisions were now made, including a considerable portion of the skin of the scrotum. An attempt was made to save the testicle, but the different constituents of the spermatic chord were so entangled with the substance of the tumor, that after some loss of time, the entire contents of the left scrotal sac were turned out. Mr. Lawrence thus describes the tumor after excision: "This mass, measuring about eight inches in length, by six in width, was taken from the scrotum. It presents the ordinary appearance of adipose swelling, the component masses of fat being larger, and the surface being partially lobulated. On a superficial view of its exterior, and of the cut surface after it had been divided, it might have been taken for a mass of beef suet. Swellings of the scrotum, in the great majority of instances, are ruptures or morbid conditions of the testis, its coats, or the spermatic chord. Diseases of the cellular structure, excepting inflammations and effusions of blood, serum, pus, or urine, are very uncommon. I do not remember to have met with a tumor in this situation; and the fatty growths, so common in the adipose tissue, are what we should have least expected in a part which naturally does not contain a particle of fat. I have never seen in the scrotum, the cellular tumor which is sometimes met with in the external organs of the female."

Several arteries were tied, and the patient placed in bed a good deal prostrated. On the third and fourth day, there was some rigor and other feverish symptoms, but they speedily subsided. The ligatures came away kindly, and in three weeks the patient walked about his house. He now walks from Islington to the city without inconvenience.

OBSERVATIONS ON THE FOREGOING CASE.—By T. B. Curling, Esq.

The point of chief interest in this remarkable case is, the great difficulty which existed of making a satisfactory diagnosis of the scrotal tumor. One principal source of difficulty was the singular

connexion which appeared to exist between the bowels and the tumor, although on a careful manual examination, the swelling seemed quite independent of the abdomen and its contents. This puzzling circumstance, however, admits, I think, of a satisfactory explanation. It appears that as soon as the patient rose from his bed, the tumor began to swell and to feel heavy and uneasy. On reference to the notes which I made of the case, when the patient consulted me in June last, at which period the tumor was about the size of a very large orange, I find, that he stated that the tumor swells, and becomes tense and uneasy before an evacuation, but as soon as the bowels are relieved it resumes its former state. This large tumor must necessarily have been supplied with vessels of corresponding size, and from its connection with the cord, the veins no doubt emptied themselves into the spermatic. Any cause, therefore, obstructing the return of blood by the spermatic veins might produce some tension of the tumor, and a sense of uneasiness. We may presume that such an obstruction occurred when the patient assumed the upright position, the veins becoming dilated by the hydrostatic pressure of the blood, and also when the fæces accumulated in the sigmoid flexure of the colon, previous to an evacuation, the tension and uneasiness of the tumor being always relieved after an action of the bowels. That this is the right explanation of the symptoms which caused so much obscurity in this case, is confirmed by the partial relief consequent upon the application of a truss making pressure at the abdominal ring, which was judiciously recommended by Mr. Edwards. Since the publication of my work on "Diseases of the Testis," in which the treatment of varicocele, by pressure, applied in this way, is described, I have had the opportunity of gaining considerable experience respecting it, and I have constantly found great benefit derived from relieving the swollen veins of the hydrostatic pressure of the blood.

Although the symptoms, at the time I saw the patient, favoured the opinion that the tumor was an adventitious formation in the scrotum, on which account I recommended the use of iodine, there were no signs sufficiently marked to lead to the conclusion that it was a fatty growth, a deposition of extremely rare occurrence in this part. On examining the tumor since its removal, I found that it resembled very much a large lobulated fatty tumor, even of greater size, taken from the scrotum, a section of which was given me several years ago, and is now preserved in the London Hospital Museum, but I could not succeed in obtaining any history of the case.

Provincial Medical and Surgical Journal, June 25, 1845, p. 402.

OPHTHALMIC SURGERY.

148.—TREATMENT OF PURULENT OPHTHALMIA.

By W. Lawrence, Esq., F.R.S., &c.

[In mild cases of purulent ophthalmia, ordinary antiphlogistic treatment readily succeeds; but when severe, we have to encounter danger and difficulty.

The chief object of treatment is to prevent the extension of inflammation from the conjunctiva to the cornea. So long as that retains its transparency, the eye is safe. The first question is, can this affection be controlled by antiphlogistic treatment? We must next consider how far it may be carried. In an early stage, with a healthy patient, bleeding, both general and local, may be employed, and purgatives, with antimony, given.

Bleeding is not, however, advisable in some cases, for when the strength is reduced, disease becomes obstinate, and may even assume an aggravated form in consequence.

Under circumstances of doubt, attention to the colour of the blood will assist in diagnosis; a bright scarlet colour denoting active vascular excitement; a paler colour, especially with anything of a livid hue, shows that inflammation is subsiding. Firmness of the chemosis depends upon effusion of the fibrine, and acute inflammation; softness of the swelling shows that serum only is poured out, and that the local action is of feebler character.

Excision of the chemosed conjunctiva, in severe cases, when the eye is in danger, has been strongly recommended by Scarpa and others. The beneficial effect of this proceeding may be accounted for, either by its cutting off the continuity of the inflamed membrane with the mucous covering of the cornea, or by its putting an end to the pressure of the inflamed and swollen eyelids on the conjunctiva.]

We come next to the important subject of local applications, amongst which the nitrate of silver holds the most prominent place. It is a matter of consequence to determine whether such applications are either advisable or safe; at what period of the disease they should be used, and in what form and strength. There are three modes of employing the nitrate of silver:—

1st, In solution—the strength varying from two to ten, or even twenty grains to the ounce of water.

2dly, In substance.

3rdly, In the form of ointment.

In all acute inflammations of the conjunctiva, whether catarrhal or purulent, the great source of danger is the extension of disease to the cornea. Hence, in the application of escharotics, especially if they be strong, it is an important object to limit their action to the diseased surface, and thus prevent them from injuring the cornea, which is supposed to be sound. When the vascular excitement has been checked by suitable means, the two-grain solution of nitrate of silver may be employed with safety. If it does not do good, it cannot do much harm. The same remark is applicable to its use in an early stage, with the view of arresting mischief at its commencement. I should never trust to it alone if the attack were of serious character.

As an astringent lotion, I think the solution of alum preferable to that of the nitrate of silver, in purulent ophthalmia; it has the great recommendation of being a safe remedy.

M. Ricord, surgeon to the Venereal Hospital at Paris, who has

had great experience in the treatment of gonorrhœal ophthalmia, the nitrate of silver in substance in all cases, as he alleges, with invariable success. He passes the stick of caustic effectually over the entire surface of the palpebral and ocular conjunctiva.

The application of the solid nitrate to the palpebral conjunctiva is attended with the risk of causing symblepharon, without any corresponding advantage. If this treatment should be tried at all, it should be confined to the chemosis, and an essential condition would be that the action should not extend to the cornea.

When the remedy is used in the form of ointment, ten grains being incorporated with a drachm of spermaceti cerate, and a portion introduced between the lids, which are gently rubbed so as to diffuse it over the mucous surfaces, the action must be similar to that of the substance, except that the influence is more prolonged. Here no attempt is made to exempt the cornea from the effect of of the escharotic. I have never employed this plan, which seems to me altogether objectionable.

In determining on the employment of lunar caustic in inflammation of the eye, you must bear in mind that the question is not like that of using an ordinary lotion, which can do neither much good nor harm. A single application will often excite active inflammation; I saw severe ophthalmia brought on by a small particle flying into the eye as a person was scraping a stick of the caustic to a point. If the use of the nitrate of silver in the ten grain ointment, or in strong solutions, be repeated and continued, it is capable of exciting a peculiar inflammation of the most obstinate kind, attended with change of structure in the membrane, and leading to other alterations injurious, or even fatal to vision. This kind of effect is so peculiar, that it almost deserves to be named from its exciting cause lunar caustic ophthalmia. The conjunctiva becomes thickened and indurated; its papillæ undergo a kind of hypertrophy, and project on the surface of the membrane, which thus loses its smoothness and polish, becoming granulated. The secretion is augmented and altered in quality. The granulations are most numerous on the reflexion of the membrane from the lids to the globe, and on the concavity of the upper lid. The friction of this rough surface on the upper cornea enlarges its vessels, so that they admit red blood, and tortuous vessels of considerable size are sometimes seen; it causes interstitial deposition and opacity, with a general loosening and thickening of texture, so that the mucous layer becomes assimilated to the conjunctiva scleroticæ. Deeper opacity and ulceration of the cornea are sometimes produced. The inflammation may be seen in a more or less active state. In the former, the membrane is bright red, and produces a viscid puriform discharge, which agglutinates the lids. There is a gritty feel in the eye, with pain from the friction of the rough lining of the lids, and increased suffering on exposure to light. Hence, the eye is kept closed, or only opened momentarily, and the patient is to all intents and purposes blind so long as that state lasts, which it may do for months. In the chronic state, the

vascular congestion is less active, and the membrane paler; the lids generally adhere in the morning; the eye is weak, and will not bear exertion; and vision is imperfect to a greater or less extent, from loss of transparency in the cornea. The latter change is sometimes partial, the upper two-thirds being opaque and vascular, while the lower third is clear. The conjunctival lining of the lower lid, although thickened, is hardly rough, while that of the upper may be granulated throughout. The mischief may not be confined to one eye: the opposite organ sometimes becomes affected, and suffers in the same way as that first diseased. When both eyes are involved, the patient is in a truly deplorable condition. He is blind for the time, and fears, from the obstinate nature of the malady, that sight will not be recovered: the spirits are depressed; a kind of despondency is induced, with fearful depression of the system.

Although the lunar caustic, when injudiciously applied, is capable of producing the serious mischief now described, it is not only a safe but valuable remedy under proper restrictions. The two-grain solution dropped into the eye two or three times in the twenty-four hours, will cut short catarrhal, and even the milder forms of purulent ophthalmia.

Medical Gazette, July 11, 1845, *p.* 443

149.—ON CONGENITAL OPHTHALMIC AFFECTIONS.

By W. R. Wilde, Esq., M.R.I.A., &c. Dublin.

[The cornea alone may be altered in transparency, size, &c, and such congenital malformations resemble more those that occur as the result of accidental disease in after life, than those of any other structure of the eye; hence the importance of knowing the congenital affections, for fear of being blamed for neglect or maltreatment soon after birth, &c.

Opacities are not unfrequently met with; they are almost invariably found occupying the periphery, appearing as if the sclerotic had partially grown over the cornea. Independent of the division into partial or total, two forms have been observed, differing in appearance, and produced by different causes.]

One is the true congenital opacity, the result of an arrest of development at that period (probably from the third to the fourth month), when the cornea has not yet become transparent, but looks like muffed glass, and has a pearl-coloured aspect. This appearance it sometimes retains in whole or in part at birth, frequently to such an extent as to intercept our view of the pupil, and gives an idea of a general muddiness of the aqueous chamber. In such cases (the form and size of the cornea being natural), the opacity appears to arise from an interstitial deposit in the laminated portion of this membrane, and which is usually absorbed after birth, leaving the front of the eye clear, and the organ unimpaired: and this form of malformation the practitioner should be well acquained with, as in such a case his diagnosis may in general be favourable.

[An opaque ring, resembling the arcus senilis, is occasionally observed at birth.]

It may be recognized from *micro-cornea* by the remains of the general congenital opacity; and from the overlapping of the sclerotic which we sometimes meet with at birth, by its defined edge, and by a diaphanous ring external to the opaque one; and in general, it is more complete than the *arcus senilis*. This malformation, to which we may with propriety apply the term of *annulus juvenilis*, was noticed, though not accurately described, by Wardrop, in 1808.

[Of the total darkening of the cornea, not dependent on intra-uterine disease, cases are recorded by Mr. Maclagan, Mr. Walker, and Mr. Ware. Von Ammon mentions two remarkable cases, but the honour of discovering the disease belongs to Mr. Samuel Farar, of Deptford, who, in 1790, gave "an account of a very uncommon blindness in the eyes of newly born children" to the London Medical Society.]

Ammon had an opportunity of accurately observing a case from the second week to the end of the fourth year, and has noted all the changes it underwent during that period with the greatest care. He has moreover increased the value of this contribution to science, by illustrating his remarks by eight coloured engravings, showing the process of clearing which took place in the eyes of this child during the period of his observations. A few weeks after birth the pupils could be faintly distinguished, shewing through the clearing cornea, of a small size, and situated in the upper portion of the iris.

Dr. F. Battersby has just assured me that he knows a lady in the country who has a *central* opacity of the cornea, which was congenital, and states that one of her children was born with a similar defect. Mr. Farar has related three cases of this peculiar malformation.

[Mr. Wilde has met with cases of congenital opacity of both corneæ, where though the opacity cleared, vision was totally deficient, apparently however from other causes.]

The second form of congenital opacity is that where it is obviously caused by disease *in utero*, in which the same process of inflammation, ulceration, lymphy deposits, sloughing, prolapsus iridis, synechia, and staphyloma, may and does take place as in ordinary extra-uterine ophthalmia. An instance of this kind has been related by Mr. Walker, who saw the child six months after, and the mother, a very intelligent person, informed him that the eyes exhibited the same appearance at birth as they did when he examined them. "The disease," he says "had run through its entire course previously to birth, for, according to her account, there was no puriform discharge, inflammation, or intolerance of light, noticed at any time subsequently. The cornea of one eye had completely sloughed, the eye-ball had sunk, and, of course, not the slightest vision existed. More than one-half of the cornea of the other eye was opaque; through the remaining transparent portion a part of

the pupil could be discerned, and the iris and cornea appeared almost in contact. The transparency gradually extended, and more of the pupil became accessible to light; hence, though vision was very imperfect when I last saw the child, yet it appeared to be gradually improving."*

Dublin Journal of Medical Science, Sept. 1845, *p.* 86.

150.—*Case of Congenital Opacity of the Cornea.* By P. W. Maclagan, Esq., M.D., Canada. [Mrs. K., delivered of her fourth child, 7th Oct, 1844; female healthy. The three others, all girls, though apparently healthy, all bore marks of a dropsical constitution. On visiting the woman the next day, Dr. Maclagan's attention was called to the infant, which was said to be born blind.]

The state of the eyes at this time, *i. e.* about fourteen hours after its birth, was as follows:—On neither was there the slightest trace of vascularity or purulent discharge: the left cornea was completely opaque; the right was in the same condition on its inferior two-thirds, but the upper third was clear, the opacity terminating by a tolerably defined edge. At first, I thought that I could perceive this edge to change its position, as the child's head was inclined to one side or the other, which led me to suppose the opacity resided in the aqueous humour; but this I found to be a mistake. Never having seen such a case, and not being able to hear of one, I was led to form an unfavourable prognosis; but in this I was agreeably disappointed; for in a few weeks the edge of the opacity on the right cornea began to thin off, to become less defined, and at length to recede, so that a part of the pupil could be seen on looking straight at the eye, while at first it could only be observed by looking from above. It was long before any change could be perceived on the left eye; but about the beginning of January, *i. e.* three months after birth, it too began to improve—the opacity at the upper part of the cornea becoming more diluted-looking, and by degrees disappearing. At this time, it was curious to observe the infant instinctively depressing the eyeball, when any bright object was held before it, so as to permit its image to fall through the upper portions of the cornea.

When I was removed from that post, a few days ago, the improvement was gradually progressing. There is now only a small portion of the right cornea opaque, and the upper half of the left is tolerably clear, so that the child directs the eyes forwards, and not as formerly, downwards; and I have great hopes that the opacity may disappear entirely, or at least so far as to leave vision totally unimpeded. She was vaccinated on February 12th, and soon after attacked by a very mild variolous epidemic, at that time prevalent in the neighbourhood. After this she had superficial ulceration behind the ears, which I rather encouraged than otherwise; but it did not seem to have any influence on the clearing of the eyes. No treatment of any kind was employed.

Monthly Journal of Medical Science, July 1845, *p.* 493.

* See general Index, in Retrospect Vol. IX., for several papers on this subject.

151.—ON A MODE OF OPERATING IN CERTAIN FORMS OF CATARACT.

By John Topham, Esq., M B., &c.

[Professor Sichel has lately published an article on the subject of cataract, from which the following mode new to the generality of British surgeons, is translated, and revised by the professor himself.]

Secondary capsular cataract is one of the most frequent sequels of the operation for cataract by extraction, and especially by depression.

In our "Traité de l'Ophthalmie de la Cataracte et de l'Amaurose," p. 606, we have exposed the causes which favour its production, the precautions which it is necessary to employ to avoid it, and the method of operating by depression, or by extraction through the cornea. We have not concealed the difficulties which its depression presents, nor the dangers which may accompany its extraction, even when this is practised through a narrow puncture of the cornea. This danger augments especially in the cases in which violent, obstinate, or frequent ophthalmias have preceded, or followed, the operation for primitive cataract. Extraction through the cornea is especially to be feared, when there are adhesions, pupillary contractions, partial opacities of the cornea, or a very great predisposition of this membrane to inflammatory action. We should particularly avoid this operative procedure when we have practised the operation for cataract upon one eye only, rather to remedy a deformity than to fulfil more positive indications—a circumstance which presents itself sometimes, not only in private practice, but even in the *cliniques*.

The operation for capsular secondary cataract by depression becomes especially difficult, and often altogether impossible, when the opaque membrane is adherent to the iris in one or several points. Then it cannot be completely depressed; it always re-ascends when it has contracted an adhesion to the inferior portion of the iris; floats up behind the pupil, which it partially obstructs; or fluctuates in this aperture, when it is attached to its superior edge. Often, very small and incomplete capsular shreds produce, in these circumstances, effects which we ought not to expect, and render the sight so feeble, that objects of medium dimensions are not clearly perceived, even with the aid of spectacles of a considerable magnifying power.

All the attempts which are made to depress or detach similar capsules, or floating shreds of capsules, are vain; the opaque membrane, being moveable and extremely light, escapes before the needle, or returns to its primitive position as soon as the instrument is withdrawn, though it may have been displaced laterally, or depressed.

In these cases I have often obtained complete success by a particular expedient. I pushed the opaque and moveable capsule behind that portion of the pupillary margin nearest the point of adhesion, repeating this operation until the opacity ceased to return, or

only regained incompletely its primitive seat; then I ordered the patient to keep himself carefully laid upon the side towards which I had pushed the membrane. By its weight alone, however minute it may be, the moveable capsule depresses itself still further, and remains depressed laterally: it becomes adherent to the posterior surface of the iris, and does not re-ascend, when the patient, after reclining for some days upon the side, lies upon his back, or resumes the vertical position. By this simple procedure I have often obtained complete success; unhappily, such is not always the case. It fails—

First. When the capsular fragment is too small, or adherent to one point of the middle of the pupillary margin, and is too removed from the lateral edges.

Second. When the capsule has several adhesions so firm that the needle is not able to detach them.

Third. When the capsule is floating, and retained by a single, long, very thin, and extensible filament, which cannot be broken through by the needle. In these cases, extraction becomes indispensable; but it is neccessary to avoid the dangers attached to the section, and even to the very limited puncture of the cornea, when this puncture must necessarily be followed by the occasionally repeated introduction of blunt instruments, such as hooks or forceps, the manœuvres of which contuse more or less the lips of the wound, and produce a tendency to suppuration, and to the formation of more or less thick, opaque, extensive, and misshapen cicatrices.

The extraction of secondary capsular cataract through the cornea becomes always very critical, on the account of the difficulty of seizing the opaque, non-adherent membrane, from before backwards, by the aid of the forceps or the tenaculum; it escapes most frequently backwards, and is not laid hold of but after many fruitless attempts. A prolapsus of the iris, followed by staphyloma of that membrane, by irregularity, contraction, and even sometimes, obliteration of the pupil, may be the grievous consequence of the method. To completely avoid these inconveniences we have often thought of practising the extraction of the opaque capsule through the sclerotica.

We are aware that Bell and Earle, in England, M. Quadri, in Italy, and still more lately, M. Siro-Pirondo, in France, have proposed and practised upon the living subject (with the exception of the last) the extraction of primitive lenticular cataract through the sclerotica. If their attempts have not had a success sufficient to encourage any other surgeons to imitate them, and have occasioned the first three of these surgeons to abandon this method, this seems due, in part, to the general inconveniences of a tolerably extensive wound of the globe of the eye, to the inflammation which must needs follow it, and to the escape of a voluminous body, such as the crystalline, between the lips of the wound. On the other hand, the danger of this method has appeared to me to result from the vertical direction of the section of the sclerotic by the surgeons who have practised it upon the living body. It follows from this, in effect, that the contractions of the external rectus always separate

the outer lip of the wound from the internal one, which is adherent to the cornea; that these contractions, compressing at the same time the humours contained in the ocular tunics, communicate to them a tendency to escape through the lips of the wound—dangerous circumstances, the concurrence of which must powerfully augment the chances of inflammation, of suppuration, and destruction of the eye. It occurred to me that nothing of this kind would happen if, in place of a voluminous crystalline, we extracted but a thin capsule, or a fragment of this membrane; or, in place of an extensive section, we only made the smallest puncture possible; and if, moreover, in place of being vertical, the opening of the fibrous membrane be made transversely—i. e., parallel to the fibres of the external rectus muscle, whose contractions then would not further separate the lips of the wound one from the other. The hyaloid being always more or less torn, and the vitreous body to a greater or less extent softened or liquefied, as a result of the operations of cataracts practised by the needle, I thought that it would be necessary, at the same time, to practise puncture of the sclerotic as high as possible; that we ought to choose the most slender forceps, and to avoid all sudden, too extensive motion of this instrument, for fear of producing at the same time a wide separation of the lips of the wound, and an immediate and too violent contraction of the ocular muscles. By these means, we should prevent an extensive loss of the contained liquids, loss followed by the sinking of the eye, with or without violent inflammation. I intended, in consequence, to put this project into execution on the first favourable occasion. The following cases will prove that this novel operative method, executed after the rules which I had traced *á priori*, has in effect the advantages which I had supposed, and that it is permissible to hope that, after repeated trials, we shall recognise it for a really useful acquisition in the domain of surgery. Let us add, that this method will be applicable whenever the depression of secondary capsular cataract is impossible, with the exception, nevertheless, of cases of extensive and too intimate adhesions, and of remarkable narrowness of the pupil—cases in which it will be requisite to have recourse to the operation of artificial pupil.

Lancet, Aug 23, 1845, *p.* 206.

152.—*On Muscæ Volitantes.* By James Jago, Esq., M.B., Oxon. [Mr. Jago thus speaks of the position of these bodies:]

These must all be in the vitreous humour, for the following reasons. Firstly, they are manifestly in a fluid, for they float or move about in the interior of the eye. When we raise the eye to look at any object, they evidently continue to move in the same direction, even after the eye is stopped, and then, after balancing a moment, commence to descend again to their usual places. If the eye be kept fixed for a while, if they have not passed out of the field of vision, we observe them to become motionless also. Secondly, when the card is moved across the axis of the eye in any direction, they move in the same, but only through small spaces;

that is, if we compare the spaces travelled by these, or rather by the shadows of these, to those travelled by that of a tear, or, which is the same thing, to the apparent motion of the margin of the hole. The tear passes them, on a movement of the card, with great rapidity. If we employ a card with two holes, and get a musca within range of both, we shall find that even for one which throws its shadows at the greatest distance from each other, the angular distance between the shadows do not even approximate to that between the centres of the two holes as they appear in the field of view (not reaching one-eighth of the distance in my own case): whilst we may find others for which the distance between the two shadows, if we succeed in obtaining two, is almost indefinitely small; and between the maximum and minimum distances for different muscæ there may be observed almost all values.

Hence the muscæ are not far from the retina, and are far from the cornea; also they are in a fluid. Therefore the vitreous is of necessity their seat.

[He considers them fringes or processes of the hyaloid membrane, or as deposits in it. With this view we may easily account for increase of their number by inflammation.]

Medical Gazette, May 16, 1845, *p.* 97.

153.—*Cod Liver Oil Externally in Scrofulous Ophthalmia.* By M. Brefeld.—The author treats of the employment of cod liver oil in topical applications, in the treatment of some scrofulous diseases; he praises very highly the following ointment for the cure of scrofulous ulcers, which follow inflammation and suppuration of the lymphatic glands:—℞ *Cod liver oil*, 16 parts; *yolk of egg or lard*, 12 parts; *liquid subacetate of lead*, 8 parts; to be mixed together and made into a homogeneous ointment. Pledgets of lint are to be smeared with this, and applied to the ulcerations. In the case of *scrofulous ophthalmia*, especially where there is *inflammation of the eyelid with photophobia*, M. Brefeld recommends that the free edges of the eyelids should be anointed with the pure cod liver oil. M. Cunier has frequently had recourse to the external use of cod liver oil in scrofulous ophthalmia, accompanied with great intolerance of light, with a profuse discharge of tears, and with swelling of the eyelids; he combines it in this case with the alcoholic extract of belladonna, of which he prescribes *one part to two* of the oil. Introduced between the eyelids by means of a pencil properly charged with it, the cod liver oil acts beneficially in scrofulous ulcerations of the cornea, and hastens in a remarkable manner the absorption of opacities of that membrane. In the interciliary ulcerations, this oil is also very useful: M. Cunier employs it in such cases, in the forms of the following ointment:—

℞. Oxid. hydrag. rub. . . .	gr. iv.
Ol. jecor. aselli . . .	ʒj
Cerati Edin. (Cerat d'Edimbourg) .	℈ij.

This ointment is very useful in opacities of the cornea, following vascular pannus, in cellular pannus, atonic ulcerations, &c.—From "Journal fur Kinder Krankheiten," in Annales d'Oculistique —Mars, 1845.

Northern Journal of Medicine, June, 1845, p. 48.

154.—*Formation of Artificial Pupil, and on an Instrument for Seizing and Detaching the Iris.* By W. R. Beaumont, Esq., Upper Canada.

In bringing forward these cases, the object of the author was to present to the notice of the society, a forceps which he has invented for seizing the iris, and detaching its ciliary margin from the corpus ciliare, or for drawing any portion of the iris through a wound in the cornea. After noticing the instruments used in these operations, and particularly the fine hook which is recommended by Mr. Lawrence, he remarks that the hook sometimes tears its way out of the iris, instead of detaching it; but in using the forceps suggested by the author, this laceration of the iris without its detachment never occurred, and he never failed, in any instance, in seizing the iris at the first attempt, and close to its ciliary margin. The hook may possibly, in transfixing the iris, wound the capsule of the lens; the teeth of the forceps are too short, and are set in a direction which causes them to enter the iris obliquely. The point of the forceps, when the blades are closed, is perfectly smooth, the teeth being then concealed, so that the instrument may be introduced into the anterior chamber without risk of wounding any other part than that portion of the iris which it is the operator's intention to seize. After giving directions as to the mode in which the instrument is to be used, the author concludes his paper by narrating two cases. One was a case of leucoma, with contracted and adherent pupil, in which an artificial pupil was formed by detachment of the iris from the ciliary ligament. The vision afterwards gradually improved, so that the patient was able to maintain himself by his labour: before the operation, he could only distinguish light from darkness. The other was a case of central leucoma of the right eye, the pupil elongated towards the temple by a previous operation for artificial pupil. An artificial pupil was formed by detaching the iris from the upper part of the ligamentum ciliare, and by excision of some of the detached portion of the iris. Vision was so much improved by the operation that the patient was able to read large print, and to sharpen the teeth of his saw.

Medical Gazette, May 2, 1845, p. 33.

155.—ON THE APPLICATION OF LIGATURES TO THE RECTI MUSCLES IN STRABISMUS.

By W. R Wilde, Esq., M.R I.A., &c. Dublin.

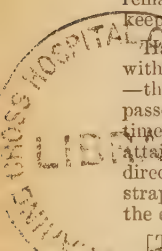
[When the cure of squinting by operation was all the rage, many cases that should never have been meddled with, were "cut for,"

and failure of course was the result. Amongst the causes which should forbid operation, is paralysis of the antagonist muscle. This may usually be discovered by noting whether the patient can turn the eye from its unnatural position. In other cases, from cause with which we are unacquainted, the eye does not regain its proper position, even after complete division of the contracted muscle.]

To remedy this defect the idea of subsequently fixing the eye by some mechanical means had often occurred to me. In the operation for club-foot, or the division of tendons in other portions of the body, the mere solution of continuity is insufficient to effect the cure without the application of a splint, or some apparatus, whereby the divided ends of the tendons or muscles are kept asunder, but the difficulty of applying such means to the eye, an apparatus so delicate as not to produce inflammation or other injurious consequences, presents itself to the most casual observer.

[The first patient on whom Mr. Wilde attempted this, was a man forty years of age, affected with severe divergent strabismus. He divided the muscle as usual, and then, finding the eye still remained directed outwards, he adopted the following means of keeping it in a proper position.]

Having curved a small sewing needle, about No. 7, and armed it with a fine ligature, I seized hold of the divided end of the muscle —that attached to the sclerotic—with a fine toothed forceps, and passed the thread twice through it, drawing it tight the second time, so as to secure firmly a piece of the divided tendon, and thus attained a power over the globe, which would carry it in any direction. The loose end of the ligature I attached, by means of straps of adhesive plaster, to the middle of the nose, so as to draw the eye a little inwards and downwards.



[The man was directed to go to bed, but so slight was the inconvenience, that he staid in his shop serving customers, the consequence of which was, that he had a severe attack of inflammation. Alarmed lest ill consequences should ensue, Mr. Wilde removed the ligature the following morning, when the eye partly returned to its divergent position.

The next time it was tried was on an old dame of 60, with severe convergent strabismus of the right eye.]

In this case the strabismus was so extreme, that a large portion of the inner margin of the right cornea was concealed by the caruncula lachrymalis. On the 13th of August, 1842, with the assistance of Dr. Hill, I divided the internal rectus on the right side in the usual manner, making myself certain that every fibre was completely severed. As this only partially relieved the squint in that eye, and as the left then turned in considerably, I divided *its* internal rectus also. Still, although I made a very clean dissection of the sclerotic on both sides, considerable convergence remained, so I then passed two ligatures, of a single thread each, through that

portion of the tendon which remained attached to the sclerotic on both sides, and drawing the ends of these ligatures downwards and outwards so as not to cross the cornea, I attached them to the cheek-bone on each side by means of straps of adhesive plaster, taking care to draw the ligatures so tight that a slight divergent strabismus was produced in both eyes.

I did not see her till the third day, when she walked down from James's-street barefooted, with the ligatures quite loose but the eyes perfectlystraight, and but very slight inflammation of the conjunctiva existing. The ligatures were then removed, an astringent lotion was applied to the eyes and some aperient medicine administered.

Subsequently this case progressed in the usual manner, and the button-shaped ends of the muscles were removed on the twelfth day. This case was the most advanced age at which I have performed the operation.

I saw this woman in the early part of the spring of 1844, and the eyes had remained perfectly straight. She says that double vision continued for a considerable time after the operation, but finally was completely removed.

I have since employed this mechanical means with complete success in seventeen other cases, four divergent, and thirteen convergent, besides that mentioned in the beginning of this article, and in some of the latter the ligatures had to be applied on both eyes. The length of time for which the ligature is to be allowed to remain on, varies according to circumstances; but, as a rule, I may state, that it should never be removed while it continues on the stretch, or, in other words, till the eye has completely righted itself, either by the action of the other muscles, or by the fixed position, or " setting," if I may so say, of the globe in its new aspect.

In fixing the ligatures care should be taken to fasten them by a second coil into the muscle, otherwise if allowed to play in a loop, they will cut through sooner than their object is effected. When we have reason to believe they will be required, the portion of the sclerotic should be left longer than usual, by dividing it between the hook and its origin, as far back as we can with safety manage. In attaching them to the cheek or nose, care should be taken that they do not cross the cornea, which, in case of internal strabismus, will be avoided best by drawing them, immediately after their insertion, without the lower lid. This turns the eye, it is true, slightly downwards, but that is, at the moment, of little consequence. The inability of closing the lids in sleep is an objection to the ligature being made to cross the upper eyelid. In fastening them externally, the best plan is, first, to apply a slip of plaster on the cheek, then lay down the ligature and cover it with another strip, and having drawn the threads to their proper degree of tensity, reverse their ends and apply a third piece of the adhesive plaster, about twice the size of the other two, over all.

I have performed this operation frequently in the presence of several surgeons of this city, who have subsequently witnessed its

successful result, and in no instance have I known inflammation or other bad consequences to follow.

In favourable cases of ordinary strabismus I unite the wound in the conjunctiva by means of three points of interrupted suture, composed of exceedingly fine silk, or hardess, a practice recommended by Cunier, but which, I believe, originated with Dr. Gulz, of Vienna. This not only facilitates the healing process, and lessens the ecchymosis and inflammation which generally follows the operation, but prevents the bulging of the sclerotic which sometimes occurs at this point. In some cases I have included the divided edges of the conjunctiva in the same ligatures with which the globe is fixed, in the manner already described.

When the strabismus is caused either by permanent spasm, or even shortening of the internal rectus, as well as when there is paralysis of the abductor, it would be worth while trying the effect of putting on a ligature without division of the muscle, and attaching it for a few days in the manner described above.

Again, might it not be advantageously tried in restoring to a straight position those eyes that have become over-divergent after the usual operation?

Dublin Journal of Medical Science, Nov. 1845, *p.* 210.

156.—OIL OF TURPENTINE IN IRITIS.

By R. Graves, Esq, M. D., Dublin.

We have much pleasure in being able to confirm the observations of Dr. Graves on the use of turpentine after mercury in iritis. During the last four years, we have been in the practice of giving it in almost every case that has come under our notice, whether mercury had been given previously or not. In many cases, especially when the disease was *chronic*, turpentine alone seemed to have the power of checking it; but when the disease was *acute*, we have generally found it necessary to give a small quantity of mercury before having recourse to the turpentine. It is not necessary, however, in all cases, that the mouth should be affected by the mercury. Our mode of administering the turpentine is similar to that recommended by Dr. Graves, viz. thirty or forty drops three times a-day in some mild fluid. Sometimes it even requires to be carried to the extent of affecting the urinary organs before its effects become manifest.

Before I conclude, allow me, says Dr. G., to make a few observations on the treatment of iritis. You are all aware, from what you have seen of my practice, that it consists in the antiphlogistic treatment, general and local, combined with a prompt exhibition of mercury, the use of belladonna ointment, &c. Now there is one point of practice, not laid down in books, but which is very important, I mean the exhibition of spirit of turpentine internally. This remedy was first recommended in iritis, as is well known, by Mr. Car-

michael, junior, of this city. Since the date of his last publication on this subject, I have had opportunities of observing its effects, and I have arrived at some conclusions on the subject, by no means uninteresting, for they tend to establish that spirit of turpentine is an excellent adjuvant to mercury in the cure of iritis. Who has not remarked the curious fact, that when iritis is yielding rapidly to mercury at the time salivation comes on, the improvement in the eye may cease after a few days in some cases, although the mouth is still sore? The practitioner is then embarrassed, and hesitates to decide whether he shall resume the exhibition of mercury; as he has no other resource, he does so, and again gives calomel freely, and again the eye improves. In a few days the mercury is again laid aside, either because the patient is suffering much from its effects, or because the physician thinks the inflammation is quite subdued; how much is he mortified, then, to find that in the course of a few days, and without any apparent cause, the eye is threatened with a relapse. The sight again becomes dim and clouded, the zone round the cornea becomes again red, and pain is again complained of. What is now to be done? Is there no other resource but mercury? Yes, I have much pleasure in being able to assert with confidence, that spirit of turpentine is a most valuable remedy under these circumstances; no one, indeed, can justly estimate its value, who has not been placed in the embarrassing situation above described. I first tried it in a case that I attended along with Mr. Carmichael, senior, and Mr. Colles. A gentleman of robust frame, aged twenty-two, had contracted chancre. He remained in the country for several weeks, and then came to town for advice, and placed himself under my care. I directed rest, cooling aperients, and cleanliness for a few days, in order that I might have time to form an opinion as to the necessity of giving mercury. In the meantime, he felt himself not quite well, and one of his eyes became red and watery; I at once feared syphilitic ophthalmia. This new affection resisted the ordinary antiphlogistic means, and in a short time its nature was evident. I had now the benefit of Mr. Carmichael and of Mr. Colles' advice, and mercury was boldly given. In a very short time the mouth was touched, and the iritis checked in its progress.

As our patient had more than once been attacked with a spitting of blood since puberty, we were anxious to cure his iritis with as little mercury as possible, and we, therefore, desisted from its use, as soon as evident improvement had taken place in the eye. In a few days, however, we were again forced to resume it in larger and repeated doses, for the redness of the eye, the pain in the eyebrow, and the dimness of sight had suddenly come back. This time we persevered in the use of mercury much longer, until, in fact, all danger of a relapse seemed over, so much so, that both Mr. Carmichael and Mr. Colles took their leave, a step in the propriety of which I fully concurred. Judge then, how much I was mortified at observing another relapse of the iritis in the course of a few days, and that while the mouth was still sore, very sore.

from the mercury previously given. I was much embarrassed as to the mode of practice I should adopt, and felt very unwilling to begin with mercury a third time, fearing that a scrofulous diathesis might be thus acted on unfavourably, and spitting of blood excited at no distant period. At length turpentine suggested itself to my mind; I remembered what Mr. Carmichael, jun., had written on its exhibition in certain forms of iritis; and it struck me forcibly that I was justified by analogy in expecting advantage from its employment. I accordingly gave my patient thirty minims of spirit of turpentine well diluted with barley water three times a-day; the effect was most satisfactory; the very next day the eye was evidently better, and it improved steadily afterwards, until it became perfectly healthy. We continued the use of turpentine about a fortnight. Since the occurrence of this case I have met with several others, one of which was under the observation of my class at the Meath Hospital.—*Med. Times*, May 31, 1845.

Northern Journal of Medicine, July, 1845, *p.* 115.

VARIOUS SUBJECTS.

157.—TREATMENT OF SPINAL CURVATURES.

By R. W. Tamplin, Esq., Surgeon to the Royal Orthopœdic Hospital.

By posterior curvature is understood that condition in which the spine becomes curved from before to behind, without any lateral deviation; and it will be found to present itself either in one uniform curve from the lower cervical to the last lumbar vertebra, or, as is more commonly the case, confined to the upper dorsal and lower cervical vertebræ; the patient presenting that appearance better known by the term of "stoop."

[The whole spine is seldom affected after the age of infancy, and then it is never "permanent." The child bends forwards, and is incapable of remaining in an erect posture, either when seated or standing.]

Upon examination, the spinous processes of the vertebræ may be traced, throughout their entire extent, forming an uninterrupted curve, and which, in thin children, will be obvious to the eye. It is necessary that care should be exercised, for it might be mistaken for the incipient stage of Pott's disease of the vertebræ, although as I had occasion to mention when speaking of angular curvature, in that affection, even in its origin, a distinct projection of one vertebra may on all occasions be discovered; whereas in this now under consideration, this sign will be found wanting; added to which, by placing the patient in the horizontal position, on the face, the deformity altogether disappears. In angular curvature, the projecting spinous process of the affected vertebra will still be found more or less prominent.

The second condition spoken of, namely, that in which the curve is confined to the lower cervical and upper dorsal vertebræ, will be found at any period, from ten years of age until puberty, and, as in the first-mentioned instance, is brought into operation by general debility, from whatever cause it may exist. It is common to both sexes, and is often combined with the strumous diathesis,—very frequently met with in young persons who grow rapidly, and who suffer from the weakness attendant upon a rapid growth. Any occupation which requires much stooping, as a compositor or engraver, also brings it into operation. In fact, any cause by which the muscles become over-fatigued, and the weight of the upper portion of the body is thrown more than is natural on the passive attachments of the vertebræ, will produce this deformity.

At the commencement, the patient will be noticed to stoop only when in the sitting posture, and little attention is paid to it, as, by reminding them, they can with an effort sustain themselves in the erect position. By degrees, however, this stooping becomes permanent, and the inability to overcome it entirely, attracts attention. The inter-vertebral substance is the first to suffer from the undue compression that it is subjected to. The ribs are of necessity prominent posteriorly, and project more than is natural, and the scapulæ become thus raised, and appear upon examination as if separated from the thorax, which, in fact, is actually the case at all portions excepting the centre of those bones; and, upon examination, the finger may with little difficulty be passed almost completely under the bone. Occasionally I have noticed a sensation of crepitus, as if the ribs grated upon the venter of the scapula; and so distinct is the sensation, that you will with difficulty reconcile the possibility of the absence of fracture, and I am totally unable to account for it. The patient then suffers from a confirmed stoop, which will not disappear in the horizontal posture. The head and neck appear to sink in between the shoulders, and they present that peculiar appearance common to old age. Their health becomes evidently impaired from the passive irritation that they are subjected to by the sensation of weakness, which does not subside in all instances even after puberty, and when the deformity has become irremediable, as, of course, the motions of the ribs are more or less limited.

[The treatment of infants thus affected must consist principally in improving the general health. Tonics and alteratives should be given, and if still at the breast, and the mother be delicate, small quantities of beef tea, or calves' foot jelly warmed, will prove of essential benefit. If weaned, meat, eggs, milk, and potatoes, should be prescribed for the diet, and the horizontal posture immediately adopted and persevered in; by such means we may altogether prevent its appearance.

When it occurs after ten years of age, if the deformity be recent and slight, and easily removed by the horizontal position, a backboard used three or four times a-day, as long as the patient's feel-

ings admit, with attention to the general health, will speedily and certainly remove it.

If, however, the deformity be confirmed, and the vertebræ be found fixed in the curved position, the treatment must be uninterrupted. For this purpose an instrument should be used, which will keep up continued pressure on the prominent portion of the curve, by means of a back-board, whilst at the same time the weight is taken off the upper portion of the spine.

By lateral curvature, then, is understood that condition in which the spine deviates from its perpendicular position to either side, occasioning an alteration in the relative position of the ribs, scapulæ, and muscles attached.

This deformity arises from any cause by which the motions of the lower extremities are rendered irregular in their actions, or by which their uniformity of action is destroyed.

2ndly. From general debility or loss of tone simply, or general debility combined with or consequent upon a rachitic condition of the bones generally, with its attendant unhealthy state of constitution.

3dly. Any occupation by which the muscles of one side or extremity are more frequently exercised than those of its fellow, such as nursing, is a frequent cause in the lower classes of life.

I believe that this deformity exists entirely independent of any *disease* of the bones, ligaments, or muscles, at least as a general rule, the rachitic condition alone excepted. The immediate cause in either case is purely mechanical, namely, the superincumbent weight of the head and upper extremities, combined with the constant effort instinctively made to keep the head in a perpendicular position with the sacrum, with the inability of the muscles and ligaments accomplishing this object in the normal position of the vertebræ.

If the motions of one or other of the lower extremities are impeded by any of the deformities hitherto mentioned, an irregular and unsteady manner of walking is the consequence; and as the effort is constantly in action to maintain the head in the perpendicular position, an increased and undue lateral motion is kept up in the spinal column, by which the ligaments become gradually and abnormally elongated; and unless the general health of the patient is good, and the muscles of the spine well developed, a deviation of the spine laterally is the result, which in time becomes permanent.

[The cause of this form of curvature, which is mostly met with in the higher classes of society, is principally general debility, or loss of tone, induced by the pernicious habits of modern education and society among the upper ranks.

Nursing is another not infrequent cause, as well as anything tending much to exert the muscles of one side inordinately. But the most serious cause is a rachitic state of the system, and this is also by far the most incurable.

When unaccompanied by rachitis, lateral curvature usually commences about the age of eleven or twelve, and if not speedily

checked, increases very rapidly. Mr. T. does not consider that stays have so much effect in the production of spinal curvatures as is usually ascribed to them.]

Medical Gazette, Sept. 12, 1845, *p.* 839.

[It is scarcely to be wondered at that the treatment of this form of lateral curvature has been left almost entirely in the hands of empirics; since the variety of opinions, the time, and the chances of ultimate failure, and therefore damage to his professional reputation, are such that few surgeons have the courage to encounter them.]

The object we have in view is simple enough, namely, to *support the column in such a manner that at the same time the deformity is either cured, relieved, or any increase of it prevented. The patient shall be allowed to follow her usual avocations, and to take such general exercise as is conducive to, and absolutely necessary for, the preservation of health.*

In incipient cases, where the curve is slight, and scarcely perceptible, and that only at times, attention to the general health, relaxation from studies, combined with change of air and scene, will invariably cure the tendency to deformity.

In cases where the curve is slight, in the form of the italic *S*, but upon examination is found to be permanent, *i. e.* offers a firm resistance, although yielding to pressure, when the patient is in the horizontal position, even though it be of some years duration, as a rule it may be perfectly cured.

In cases where the lateral deviation is considerable, and in which the ribs retain their form, although displaced considerably, provided the patient has not done growing, and that the spine is found to yield to a great extent when pressed upon by the hand in the horizontal posture, the deformity can at all times be relieved, and not unfrequently cured; no matter whatever it be, a double or treble curve.

In cases, however, that have passed the age of puberty, and in which the curve is considerable, and the spine upon examination is found to be firm and unyielding, where perhaps anchylosis of the vertebræ has taken place, but little good can be expected or derived; but, even in these cases, if there is considerable motion, as we sometimes meet with, the deformity may be relieved, and the sense of weakness altogether removed, which to the patient is of great importance.

In rachitic cases, when the bones themselves become altered in form, of course a cure is out of the question. Our efforts can only be directed to apply the most efficient means to put a stop to an increase of the deformity, and as far as is safe or prudent, relieve that which is already in existence. I say safe or prudent, because the distortion of the ribs and chest is occasionally so severe, that no one possessing either sense or feeling would attempt the application of such force as would have a tendency to restore them to a *straight* position, which could only be obtained at the expense of fracture of the ribs, or dislocation of the vertebræ.

In the foregoing division of cases I have purposely avoided allusion to the length of the upper or lower curve, whether the one is more or less abrupt than the other, &c. &c., inasmuch as they will be found in every variety, and do not, on that account, alter the indication of treatment; if, however, as is occasionally met with, there is, in combination with the lateral, the antero-posterior curvature, the use of the common back-board, in conjunction with the means to be mentioned, I have found effectual in all cases that admit of cure; and in the more severe and incurable cases, the back-board will act as a constant support. The plan that I have adopted, and found so completely successful, is that of Tavernier, of Paris, namely, the use of the lever belt, to which I have added a crutch to support the shoulder on the concavity of the curve. This instrument, if properly applied, and carefully kept in its position, will cure any slight case of curvature by the constant support and pressure that it is capable of effecting on the projecting ribs. It must, however, be worn night and day, so that no return of the spine to the malposition is admitted of; as here, as well as in the deformities I have previously directed your attention to, unless the position is constantly maintained, the ligaments cannot recontract, neither can any resistance which those on the concavity of the curve offer be overcome: this, therefore, is indispensably necessary. In addition to the use of the instrument, the only exercise that I have thought it prudent to adopt has been the use of a common pulley, fixed in a convenient position (which is readily done by any carpenter) for the arm, situated on the concavity of the curve, in the following manner. Let the handle of the pulley be fixed at the height of the hand of the patient, when the arm is extended in the horizontal position, whilst the patient is standing, and let the patient stand at such a distance that she can just grasp the handle; then let her flex and extend her arm alternately, having such a weight attached that she can raise without any violent effort, just so long as she can do this without fatigue. Let this be repeated three or four times daily, directing her, however, to use only the arm, and not to throw the weight of the body on the pulley, as this would diminish the muscular effort. By this exercise the rhomboidei muscles, attached directly to the base of the scapula and the spine, are brought into a state of activity, and of course increased development—as well the body of the trapezius, the serratus magnus, and the lower portion of the longissimus dorsi and sacro-lumbalis—whilst the muscles in the convexity are rendered so far passive as to be used only in connection with the ordinary duties. I most decidedly object to the exercise of the muscles on both sides of the spinal column; during the time the curve is in existence, as is most commonly done in a variety of amusing and not less expensive ways to the patient, as by so doing a direct obstacle is maintained, and kept in active operation, to prevent the removal of the curvature—a practice so opposed to common sense that one is at a loss to assign a reason for it, and a

practice entirely opposed to the course adopted, and found to be of such essential importance in the treatment of other deformities without exception.

In the more severe cases, then, I have not found the lever belt answer the desired end so well, as the difficulty of keeping up a constant and well-regulated pressure to any extent is so great, from the tilting of the belt, that it requires an amount of attention and watching, that none could devote to it except the friends of the patient, who cannot be expected in the mass of cases to carry out the treatment, and without which a cure is out of the question. I have, therefore, invented an instrument which I have found most successful, the action of which may be compared to that of one hand pressing on the convexity of the ribs of the projecting side, whilst the opposite hand presses in the ileum of the opposite side, leaving the abdomen and chest free, and admitting of free exercise of the muscles at the same time that the pressure is applied to that portion only which requires support; and as the spine yields, the pressure can be gradually increased, as easily as in the treatment of any one of the distortions I have had to speak of. It consists of a band which encircles the pelvis, having an upright position attached behind, at the upper portion of which is a moveable pad, so made that it adapts itself to the projecting ribs, and with the screw the pressure can be regulated according to circumstances; beneath is an arm, which extends to the opposite side of the band, and which regulates the position of the upright portion, without causing the instrument to be displaced to any extent. The use of this instrument involves no sacrifice of time, nor confinement within doors, and enables the patient to take such exercise as they may feel disposed to, and to follow their usual duties, not only without inconvenience, but with absolute comfort; as the support derived from the instrument relieves them of that sense of weakness and pain that is complained of in almost every case of lateral curvature.

[In addition, decoction of aloes, with carbonate of ammonia and spirit of lavender should be given with the view of regulating the digestive organs and increasing the tone of the system, and if the patient be very delicate, such tonics as are best adapted to his or her particular constitution. Of course regular out-door exercise must be taken whenever the weather permits; a walk once or twice a-day is the best form.

Respecting the various plans that have been so long acted upon, Mr. Tamplin remarks that he believes them to be wrong in principle, and we cordially agree with him in hoping that they will be abolished, now that we are acquainted with simple, certain, and rational modes of cure.]

Medical Gazette, Sept. 26, 1845, p. 926.

158.—TREATMENT OF HIP-JOINT DISEASE.

By C. Aston Key, Esq, Surgeon to Guy's Hospital.

[Affections of the hip-joint are too seldom seen at the commence-

ment, when properly applied remedies might restore the joint. In the second stage, we have no longer a simple case of erythema of the synovial membrane, but an active form of inflammation extending to the more dense parts of the capsule and cartilage, attended with severe pain in rotation and abduction of the limb.]

Often, in the earliest part of the second stage, the limb will not admit of perfect extension, and by careful examination of the joint it may be discovered that the thigh is permanently flexed on the pelvis. It is this state of the limb to which I wish to direct your attention, as fraught with the worst consequences to the patient.

This state of flexion of the femur on the pelvis usually takes place slowly and imperceptibly, but sometimes it is rapidly induced by a sudden attack of inflammation in a joint that has previously exhibited signs of disease in its mildest form. This is the worst form of the disease, so far as the deformity of the joint is concerned; for the intense pain which the patient experiences on the slightest movement of the limb induces her to seek for ease in positions that add greatly to the distortion of the limb by the obliquity given to the pelvis. The patient is seen lying usually on her sound side, with the affected limb drawn up to nearly a right angle with the pelvis. As the patient lies on her side the affected limb appears to be three or four inches shorter than the other. When she is placed on her back, which position she assumes with difficulty, and the bearings of the two patellæ, and the spinous processes of the ilia noticed, the former are seen to differ as much as from two to three inches, while only a difference of an inch is perceptible in the level of the iliac spinous processes. This would seem to shew that the limb was actually shortened; such, however, is not the case, and by examination of the pelvis it will be seen that the twist of the pelvis on the lumbar vertebræ, by carrying the affected joint backwards, is the cause of the great shortening of the limb.

During the stage of inflammation it is impossible to use any means of counteracting this distorted position of the pelvis, and by the time that the patient is able to bear extension so as to restore the pelvis to its natural bearing, and to diminish the angle which the femur makes with the pelvis, the parts have become so fixed in their new position as to render it difficult to alter their position, and impossible in the majority of cases to restore them to their natural bearings. The consequence is, that when the patient is convalescent with a somewhat stiffened joint, the foot cannot be brought down to the ground, and a shoe with a sole of two inches is required to enable her to walk with the foot flat on the ground.

How is this state of things to be prevented? The only remedy for the evil is in every case of disease of the hip-joint to maintain the straight position, as soon as the nature of the affection is ascertained.

It is a position applicable in all stages of the disease.

In the early stage, characterised only by a slight limping in the gait, or by an occasional slight pain in the knee or thigh, it possess-

es the advantage of maintaining the joint in a state of complete repose. The articulation being at rest, the muscles do not act, but remain in a passive state. On the contrary, when the limb is kept bent with a pillow placed under the knee, a position usually resorted to in the early stage, the pelvis and thigh in a child are continually in motion; little or no pain is felt by the little patient, and injunctions to preserve rest are made in vain. In the bent position, therefore, rest, one of the most important elements in treating a diseased joint, is not maintained, and the disease, therefore, fails often to be arrested. By a long splint applied along the outer side of the limb, and made to extend from the toe to the axilla, entire rest is given to the joint, and absolute inaction of the muscles preserved. I believe, from what I have seen of this stage of the affection, that the arrest of the disease is greatly expedited by the entire tranquillity obtained by the straight position in conjunction with the mercurial treatment.

The principal advantage of preserving the limb in a straight position is seen in the second stage of the disease, when, under the united effects of inflammation and ulceration of the cartilage of the joint, the tendency of the flexor muscles to contract induces such a degree of deformity in the lumbar vertebræ, pelvis, and hip-joint, as, when once allowed to take place, can never afterwards be wholly remedied. The position on the back is not irksome to the patient, nor painful, but is borne with cheerfulness and without complaint, because in the movements which the body undergoes the diseased joint is kept at rest.

The course which abscess takes when suppuration takes place in the joint seems to be in some degree modified by the straight position. When the limb is allowed to bend upon the pelvis, matter is usually formed at the back part of the joint under the glutæi muscles, or at the side of the joint on the anterior margin of the glutæus medius. But when the straight position is observed, the suppurative action is inclined to the fore part of the joint, and the collection of fluid is formed on the outer edge of the iliacus muscle, by the side of the tensor vaginæ femoris. This course of the matter may be accidental; but in two cases now in the hospital suppuration has taken this course, one having burst and discharged itself; and in the other case the abscess is making its way towards the surface in the same direction. I know of no inconvenience attending this peculiar course of the abscess; it is as easily managed, or perhaps more so, than when it occurs on the posterior part of the joint. But there is an advantage gained in the advanced stage of the disease too important to be passed over; namely, the prevention of dislocation of the head of the bone on the dorsum ilii; an occurrence, though by no means frequent, yet found sometimes to take place, and greatly adding to the deformity and shortening of the limb. It can only occur in the flexed position of the limb, which thrusts the head of the bone backward against the capsular ligament and posterior part of the acetabulum; and these structures, together with the head of the bone, being partly destroyed by the ulcerative process, the femur gradually escapes from the cotyloid cavity, and becomes lodged upon the dorsum of the ilium.

The state of anchylosis in which this disease usually leaves the joint, requires a concluding observation in reply to any objection that might be raised to the utility of a limb anchylosed in a straight line with the body. The only inconvenience arising from it occurs in the sitting position, in which the patient being unable to flex the limb sufficiently to sit on a chair in the usual manner, is compelled to drop the affected limb in a nearly perpendicular posture, and to sit with the pelvis resting on the side of the chair. This is the only evil attending the straight position, and is more than counterbalanced by the uniform length of the two limbs, and the absence of almost all lameness in the act of progression.

Care, however, should be taken to prevent the patient bearing too early upon the unsound limb during convalescence, when the straight position has been observed in the treatment of the case; for a sense of weakness, as in the first stage of the disease, induces him to raise the pelvis on that side in order to prevent much weight being thrown upon the weak limb. The effect of this elevation of the ilium is to curve the lumbar vertebræ in a lateral direction; and this distortion becomes permanent.

Medical Gazette, Oct. 24, 1845, *p.* 1098.

159.—*Formation of an Artificial Joint.* By J. R. Barton, Esq. M. D., Philadelphia. This method, for which we are indebted to the ingenuity of Dr. John Rhea Barton, has been applied as yet but to the anchylosis of a single articulation—that of the hip-joint. It has, however, been suggested by this skilful surgeon, that it might likewise be found applicable to similar affections of the lower jaw, knee, elbow, fingers, and toes, when the muscles of these respective articulations remain uninjured. The method consists in the uncovering of the bone at or near the diseased point, dividing it across with the saw, and subsequently moving the lower portion from time to time upon the upper, to prevent a solid reunion of the divided parts. By this mode of proceeding, there is the same disposition of parts for the formation of a false joint, as we often find producing that result in fractures where the bones are not kept sufficiently at rest. Under such circumstances, the two opposing surfaces of bone may be expected to unite by flexible ligamentous matter, or become smooth and polished by the friction; the lower fragment, in the latter case, rounding itself into the form of a head; and the other hollowing itself more or less into the shape of a cup, in which the former plays; the periosteum and surrounding cellular tissue becoming condensed and thickened, so as to perform the office of a fibrous capsule, and the muscles modified to a certain extent, to accommodate themselves to the new articulation.

For anchylosis of the hip. The ingenious idea of remedying this deformity by the establishment of an artificial joint, was first practised by Dr. Barton in 1826. A similar operation was repeated four years subsequently by Dr. J. Kearny Rogers, of New York; the two constituting the only instances in which it has yet been attempted on the living subject. The patient of Dr. Barton was a young

man twenty-one years of age, in whom the thigh was held immoveably bent at a right angle with the pelvis, and the foot turned in rotation inwards. A crucial incision was made over the projecting portion of the trochanter major, the vertical division of which was seven inches in length, and the transverse five. The four laminæ thus formed were dissected and turned back, and the fascia freely opened. The muscular fibres were then detached from over the trochanter by turning the scalpel sideways, so as to allow the two index fingers to be passed freely round the neck of the femur, till they met on the opposite side. With a strong straight saw the bone was then nearly divided through the upper part of the great trochanter and part of the neck of the bone. The operation lasted but seven minutes, and no artery was opened that required to be tied. The limb was then drawn to its proper position, when the undivided portion of the bone separated with a snap. The wound was closed with a few points of suture, and the extremity secured in the fracture apparatus of Desault.

On the twentieth day after the operation the inflammatory symptoms had in a great measure subsided; some slight passive movements were then made with the limb, in directions natural to the healthy joint, which were cautiously repeated from time to time. By the sixtieth day the wound was completely healed; the patient was able to stand erect with the aid of crutches, and could advance his limb exclusively by muscular exertion. At the end of four months he was able to walk without apparent lameness, and all the movements of the limb were executed without pain. The foot could be carried twenty-two inches forward, twenty-six backward, and twenty outwards, and could be rotated inwards to the extent of six. The patient enjoyed the use of his artificial joint for a period of six years, at the end of which period, from causes attributable to intemperance and repeated falls upon the hip, the new joint became permanently anchylosed.

The operation of Dr. Rogers, was equally successful, and his patient left the hospital at the end of four months, apparently with a perfect use of the new joint, as he could walk with ease by the assistance of a cane. Of the ultimate result in this case—whether or not the new joint in the end became anchylosed, as in the case of Dr. Barton, the profession has not been informed. In consequence of the shortening of the limb of the opposite side from fracture, Dr. Rogers, instead of making a simple section, removed a wedge-shaped portion of the bone, in order to render the relative length of the two limbs more equal.

[The successful issue of this mode of operation ought we think to attract the attention of all operating surgeons. We believe that they are quite unknown in this country as yet.]

British and Foreign Medical Review, July, 1845, *p.* 49

160.—*Remarks on Sanguineous Tumors on the Heads of New-Born Children.* By W. B. Kesteven, Esq. [In Retrospect Volume XI,

Article 127, we gave the contents of a paper by Mr. Adams, of Glasgow, on cephalhæmatomata, or bloody tumors on the scalp of new born infants. Mr. Kesteven has met with a case in his own child, and he consequently had ample opportunities of observing its progress. He says,]

The day after the infant's birth I perceived a slight swelling over the left parietal protuberance; it did not exist at the time of birth; the labour was perfectly natural, and little or no occipital tumor existed. The swelling rapidly increased, and in two or three days had attained its greatest size, constituting an ovoid tumour of twelve inches in circumference at its base, six and a half inches across its longer, and four inches and three quarters across its shorter diameter. It was tense, covered by the scalp, which presented no difference in colour or temperature from the surrounding integument; it was entirely opaque; it extended downwards to the ear, depressing the upper part of the pinna. The child did not manifest any signs of pain when it was touched, neither did pressure exercised upon it, produce the slightest symptoms of oppression of the brain; it was free from pulsation, and auscultation detected no sound occurring in it.

[Several surgeons of eminence were consulted as to what it could be, but the case being new to them, none could give a decided opinion, and accordingly the swelling was left entirely alone, from fear of consequences if opened.]

The tumor remained stationary for six weeks: one day, at the end of this six weeks of real anxiety, I thought it felt rather softer: on the next day a defined hard edge was distinctly perceptible within its base: this was at first a source of great alarm, as I thought I then felt the borders of an opening in the bone: however on a closer examination, the firm substance of the skull could be traced within the limits—the edge I had felt was, I suppose, indurated tissue bounding the effusion. Two or three days sufficed for the rapid and total removal o fthe entire tumor by absorption; no recurrence took place, and I am thankful to say the child has since (*i. e.* eighteen months), enjoyed as good health as most children.

You will perhaps forgive my adding a few remarks to this case.

Mr. Adams distinguishes three varieties among these sanguineous tumors: 1st, the blood between the integuments and periosteum; 2nd, between the periosteum and bone; 3rd, between the bone and dura mater.

I infer that the case now related belongs to the second variety, and is distinctly different from the first variety, or common occipital tumor, from its clearly defined limits, its tension, its opacity, the absence of serious symptoms, and lastly, the difficulty of conceiving it to be aught else than blood. The result confirms the diagnosis.

On the subject of treatment, a single case, where the cause is unknown, can afford but little guidance; but where the like are of

rare occurrence one cannot but be influenced by the few examples one meets with; and on this point, I would beg to observe, that the result of the case under consideration, and the analogy of hæmatocele would make me slow to adopt the recommendation of Lôwenhardt, approved by Mr. Adams, to puncture and apply strapping; the more especially as fatal hæmorrhage might occur, and did actually occur, in the practice of M. Valleix, and again within the knowledge of Smellie. My own impression, therefore, strengthened by subsequent inquiries among my professional brethren, is, that all such cases are better left alone, and that the repressing the desire manifested by the patient's friends "to do something," will be found in most cases the most difficult part of the treatment of the case.

Medical Gazette, October 17, 1845, *p* 1082.

161.—*On Phosphate of Lime in Discharges from Bone.* [It has hitherto been supposed by those surgeons who have most carefully studied the functions of the absorbents, that the removal of dead bone by these vessels is extremely improbable. Professor Bransby Cooper, however, with the assistance of an experienced chemist, has proved that]

The discharge arising from diseased bone contains a large quantity of the solid constituents of bone in solution, which consequently pass off in these fluids. He was thus led to believe that nature finds in the animal portion of dead bone a solvent for the more solid and inorganic portions, and that the surrounding tissues, by the pus they throw out, join in the attempt to extrude a substance, which, although once organised, has become an extraneous and foreign body. Not only is this discovery of the greatest use as pointing out the means employed to effect the removal of the dead bone, but it also enables the surgeon to ascertain without the assistance of the probe whether bone be diseased or not; for it is sufficient to know by a chemical examination of the matter discharged, whether phosphate of lime be present or not, to infer at once the existence of dead bone. These discharges no doubt differ with the nature and extent of the disease existing in the bone but the discharge from a case of diseased bone, at present under surgical treatment, was found to yield after incineration from 72, grains of pus—

Phosphate of Lime gr. 1·75 or 2.43 per cent.
Carb. Lime and Soda, gr. 15 or ·208 per cent.*

* Very few of our chemical works contain analyses of pus, and the constituents are stated in vague and general terms. The fact that phosphate of lime, exists in this secretion, as an occasional constituent, offers no objection to the above views, since in ordinary pus, the phosphate exists only in traces, while in the pus from bone, it has been found by a good chemist, to form as above mentioned, nearly two and a half per cent. Frommherz states, that traces of the phosphates of lime and magnesia have been frequently found in this liquid (Lehrbuch der Medicinischen Chemie, B. 2, S. 323,) and a still later writer on Pathological Chemistry, L'Héritier, says, that Dumas has found in this secre-

The experiment, therefore, of Sir W. Blizard, merely shows that the purulent discharge of ulcers is capable of effecting the solution of bone, and carrying it off; and no doubt the fluid which continually oozes from a transplanted tooth possesses the same property; thus refuting the arguments of Mr. Wilson on this subject.

Having discovered nature's method of removing bone, it becomes practicable for us to imitate or assist in the operation. The injection of nitric acid was long ago proposed for the purpose of dissolving dead bone, and we now see that this is strictly in accordance with the means employed by nature; but nitric acid is a powerful caustic and irritant, its use is therefore injurious to the surrounding living parts, and necessarily interferes with the process of reparation, whereas the fluid employed by nature is harmless, and permits of the reparation of the injury, whilst it removes the obstruction which impedes success. Professor Cooper, at the end of his course, said he was still prosecuting experiments on this subject, and expressed with some confidence a hope that he would be enabled to find a solvent of bone which shall possess all the requisites essential to insure a steady solution of dead bone without injury to the surrounding tissues. He is now, we believe, employing a solution of phosphoric acid for this purpose; for even when moderately concentrated, it exerts no corrosive action on the skin, and its combination with phosphate of lime forms a super-phosphate, which is so soluble as to be deliquescent, and therefore easily removed in a liquid form. The Professor also recommended phosphate of soda in preference to sulphate of magnesia, in cases of disunited fracture, when aperient medicines are indicated. This appears to us well worthy of attention, as a means of supplying at once the necessary evacuation from the bowels, and placing within the reach of the absorbents a substance fitted to supply the deficiency which exists in the system for the reparation of bone.

Medical Gazette, May 23, 1845, *p.* 131.

162.—*Case of Ovariotomy.* By G. Southam, Esq., Surgeon to the Salford Hospital and Dispensary, Manchester. [Another case of extirpation of an ovarian tumor having occurred, which, on investigation, seems to have been one of the most successful yet recorded, we proceed to lay a slight history of it before our readers. Great credit is certainly due to Mr. Southam, for having added to our capabilities of forming a true diagnosis in these formidable diseases.

Mrs. S., æt. 38, had an ovarian tumor, which she wished extirpated. For twelve months before, it had increased so as materially to interfere with respiration; some pain occasionally in the left inguinal region.]

tion phosphate of ammonia, and in the incinerated residue, the phosphates of lime, magnesia, and potash. (Traité de Chimie Pathologique, 673.) The proportions are not stated, but it may be inferred that these phosphates existed only in traces.—Ed. Gaz.]

On examining the abdomen I found it nearly globular, and very prominent, distended to at least twice the size of a female at the full term of pregnancy, and elevating the cartilages of the ribs to a considerable extent: the parietes were perfectly smooth and natural in colour; fluctuation, though of a resisting kind, was very distinct in every part, and percussion elicited a dull sound. Change of position produced scarcely any alteration in its form. The uterus, as examined per *vaginam et rectum*, seemed to be of the natural size, but was situated higher in the pelvis than usual; the os was quite healthy, and on the abdomen being raised and depressed by an assistant, whilst the finger was placed in immediate contact with it, the uterus might be distinctly felt to rise and fall with an inclination to the left side. In the erect position it could not be made to bound away from the finger. There was no protrusion of the vaginal parietes, but an elastic swelling could be easily perceived, pressing on the left side of the uterus, and upper part of the vagina; in other respects the pelvic cavity was not encroached upon. Though somewhat emaciated, her general health did not appear impaired; appetite good; tongue clean; pulse natural; bowels occasionally constipated, but easily acted on by medicine; catamenia regular, though in less quantity than formerly; felt pain at times in the left inguinal region, or whenever she lay on the left side, and in consequence of the pressure of the tumor upwards, she has been unable to lie on her back, or in any other position, excepting on the right side, for the last twelve months.

The symptoms clearly indicating encysted dropsy of the left uterine appendages, advanced to such a stage as to render surgical interference necessary, and her constitution not being much affected, I considered the case was peculiarly favourable for the operation.

[Having determined on extirpation, the patient was advised to take lodgings near at hand; the room being heated to 75°, and the bladder emptied, &c. it was performed in the presence of Drs. Radford, Clay, Watson, and several surgeons, as follows:—]

An exploratory incision, midway between the umbilicus and pubes, was first made, and the peritoneal cavity opened sufficiently to admit the finger. A characteristic membrane of a bluish white and shining surface appearing at the opening at once satisfied me of the existence of a cyst, and the finger introduced between it and the peritoneum, discovering no adhesions in the immediate neighbourhood, I punctured it with a full-sized trocar.

After from sixteen to eighteen pints of clear, lemon-coloured slightly mucilaginous fluid had been evacuated, pressure on the parietes being well sustained during its escape, the canula was withdrawn, and using the index finger as a director, the opening was enlarged above and below with a probe-pointed bistoury, to the extent of between six and seven inches. Having ascertained by the hand introduced into the abdominal cavity, that there were

no impediments to the extraction of the tumor, it was carefully drawn out, gentle pressure being continued on the abdomen. Finding it was attached to the uterine extremity of the left broad ligament by a short and slightly vascular pedicle, I tied it firmly with a single ligature of the strongest dentist's silk. The pedicle was now divided, and the tumor being removed, the margins of the wound were immediately approximated to prevent the ingress of air. After a brief interval, the wound was again opened to remove what blood had escaped internally, and to ascertain that the vessels of the broad ligament were firmly secured. The uterus and opposite ovary were also examined and found healthy. One end of the ligature being cut off, the other was left dependent at the lowest point of the wound, the edges of which were brought together by four interrupted sutures and straps of transparent tissue plaster. Upon these a broad pad was applied, and the whole being adjusted by a bandage, the patient was lifted into bed, within 25 minutes from the commencement of the operation.

[The case proceeded uninterruptedly to a favourable termination; the ligature came away on the forty-ninth day, and the fistulous opening then closed.

The remarks on the diagnosis form the most valuable part of the paper. After remarking that the difficulty in making a correct diagnosis forms the chief objection to the operation, which must continue so long as mere examination of the abdomen, and the history of the case alone, are relied on in forming it. We are told that in the present case, though the enlargement was uniform and fluctuation distinct in every part—]

An examination per *vaginam et rectum*, cleared up all doubts. not only of the existence of an ovarian tumor, but of its exact nature. The absence of any protrusion of the vaginal parietes, the elevated position of the uterus in the pelvic cavity, and the inability to to cause it to bound away from the finger, proved that the fluid could not be ascitic, whilst the projection of the swelling on the left side, the decided influence which raising and depressing the abdomen produced on the position of the uterus, with its inclination to one side more than the other. evidently indicated that the disease was connected with the left uterine appendages. The The uniformity in the abdominal distension, the distinct fluctuation in every part of it, and the inability to discover any solid matter encroaching on the pelvic cavity, led me to infer that it consisted of one or two cysts only; and the comparative immunity from any great degree of suffering until within the last twelve or eighteen months, the absence in the history of any previous attacks of peritonitis, together with the slight impediment to the action of the bowels, rendered the existence of adhesions doubtful.

In the operation, the evils of both the major and minor incisions were guarded against, by making the opening no larger than was necessary to ascertain the nature and connexions of the disease,

and to admit of its removal after reducing it by paracentesis, without occasioning the least violence or displacement to any of the neighbouring parts. Had the slightest obstacle occurred previous to the successful termination to the operation, this plan would also have enabled me to have receded without much danger to the patient.

Provincial Medical and Surgical Journal, Sept. 10, 1845, *p.* 561.

163.—ON BURSAL SWELLINGS OF THE WRIST AND PALM OF THE HAND.

[Till lately, incision, followed or not by the use of the seton, was the chief mode practised for the cure of enlarged bursæ. Dupuytren contented himself with merely slipping a seton under the annular ligament, but the effects were much the same as the former mode. Mr. Syme more lately proposed making a free incision into the bursæ and through the annular ligament. He has related one case treated in this way, but it is evident that even this is not free from danger. A new mode of treatment is now proposed by two Parisian surgeons.]

On the one hand, M. Gerdy has tried sub-cutaneous puncture, preceded and followed by the application of leeches, and methodical pressure; the result has been successful, but we cannot state whether or not there has been relapse, the patient having left the hospital before there was sufficient time to ascertain if the cure were permanent. On the other hand, M. Velpeau has been trying injections with iodine, and has obtained speedy cures, free from all accidents. Others have followed the practice, and have had reason to be satisfied with it. M. Chassaignac informs us that he has cured one case by this method, and he has just operated on another in our presence, in the Hôtel Dieu. The case is that of a man aged 40, who for some years has had a double tumour on the palmar surface of the right hand; it is fluctuating, and without change of colour on the surface. One of these tumours, of the size of an egg, was above the annular ligament, the other, of the size of half an orange, was situate in the palm of the hand. The fingers could not be extended; on pressing alternately on either tumour, that sensation of jarring peculiar to hydatid cysts was not present; but this negative character arose from the circumstance of the two tumours not freely communicating, in consequence of which the displacement and friction of the corpuscles on each other was prevented. The hydatic bodies, however, may be altogether wanting, but this does not in any way change the nature of the disease; besides, they are sometimes present in small quantity. In this case there was no doubt of the true nature of the complaint.

M. Chassaignac operated in the following manner:—After causing the tumour to project, by means of lateral pressure, he plunged a trocar into the palm of the hand; a small quantity of viscid fluid escaped. By means of strong pressure on the two tumours, a pro-

digious number of hydatic corpuscles escaped through the canula; several of these were larger than the diameter of the instrument, which proved them to be elastic and compressible. Examined by the microscope, these productions appeared to be true hydatids with vesicular bodies, and not merely those hard, simple, albuminous concretions usually found, which would lead us to believe in the existence of two varieties of these tumours, the one truly hydatid, the other only hydatiform. After having completely emptied the tumour, M. Chassaignac washed out the sac twice or thrice with warm water; he then injected a solution composed of one-third tincture of iodine, and two-thirds of water. After allowing it to remain a few minutes, the fluid was completely withdrawn. It was remarked, during the process of these injections, that the subannular opening, serving as a communication between the two sacs, was very small, so that the fluid passed from the palmar sac into the superior, only when the former was full; and this appears to explain the obscurity of the fluctuation between the two sacs. We have also to observe, that, according to the testimony of the patient, the disease first appeared in the wrist, and that it was a considerable time before the palm became affected. An inverse course, however, occurs, as is frequently observed. But the cyst in its development, and in extending from the one region to the other, always passes under the annular ligament. If this explanation be correct, it is difficult to explain the excessive smallness of the annular opening, unless we suppose it had become contracted in consequence of inflammation, or by some accidental valve, both of which are rare, for the passage under the ligament is usually perfectly free. The tumours were again filled, a few days after the operation, but in a much less degree.

Two months have now elapsed since the period of puncture, and the tumours are about one-half their original size; the fingers are extended, the patient can move them, and is without suffering; the tumours at present appear stationary. M. Chassaignac is of opinion that the cure will be effected by spontaneous absorption of the fluid, as in hydrocele; and he founds this opinion on a case he lately observed, in which there was a large serous cyst in the left groin; the tumour re-appeared after injection with iodine, but was gradually absorbed; in its latter stage the tumour felt like a compacted knot, but at length entirely disappeared. In the case now recited, if the tumour does not disappear, recourse will be again had to puncture, when a lasting cure will be obtained, without any kind of danger. There is in this process of M. Velpeau a real step in advance, of great value, and which reduces to a mere trifle a disease hitherto formidable. We may state, before concluding, irrespective of the method itself, that no special importance is to be attached to the tincture of iodine, as it may be replaced, in circumstances of necessity, by various other substitutes. At the last scientific congress in Italy, a case was communicated by Gherini, surgeon to the Great Hospital at Milan, of a large bi-lobular hydatid cyst, situated at the posterior part of the elbow, cured by incision alone, and from

which there escaped 52 barley-shaped corpuscles. The sac suppurated, it is true, but the cure was complete, without any unfavourable symptom. (*Annali Univ.*, Jan. 1845). The bi-lobular form, in this case, was remarkable, from the absence of the annular ligament, which is sufficient to account for it, at the wrist; it may be also remarked that the barley-shaped concretions are not confined to the latter region. Gherini states that he is certain that neither of the cavities communicated with the articulation. The extraction of the hydatid corpuscles is, of course, essential to the cure of these affections.

In conclusion, we have laid before our readers two new and important modes of treatment of these affections; that of M. Gerdy, and that of M. Velpeau. They may, in case of necessity, be combined.—*Annales de Thérapeutique*, for April 1845.

[Dr. Cormack, in a note, takes occasion to remind "our Gallic neighbours, that in these cases, the success so hastily claimed is based upon a most slender, and apparently insufficient foundation," and recommends as a model for imitation, the valuable paper by Professor Syme on the same subject.]

Monthly Journal of Medical Science, June, 1845, *p.* 459.

164.—*On the Treatment of Effusion into the Bursa Patellæ.* By H. J. Johnson, Esq., Senior Assistant Surgeon to St. George's Hospital. [Effusion into the bursa patellæ is a very common affection, familiarily known by the name of "housemaid's knee." In its usual form, the effused fluid is pellucid, and the walls of the sac are thin. Having remarked on the division into vesicular, or cyst-like, and vaginiform, or complicated bursa, Mr. J. proceeds:]

The former compose the majority of the subcutaneous bursæ, the latter are bound up with tendons. They are especially seen in connection with the flexor and extensor tendons on the wrist and ankle, are of considerable extent, imperfectly divided into several compartments, and placed beneath the annular ligaments and fascia, so as to plunge deeply amidst the tendons of the limb. It is obvious that inflammation in the vaginiform bursæ is a very different affair from inflammation in the simple ones. In the *latter*, if suppuration ensues, it is superficial, accessible, limited, or if it escapes the precincts of the bursa, it is into the *subcutaneous* cellular membrane. In the *former*, the inflammation is in a larger cavity, and involves a deep and inaccessible one; if suppuration ensues, and is confined within the bursa, it is still deep and hard to be got at; but if it extends, as it is apt to do, among the neighbouring parts, it is in the *deep* cellular membrane, stretching under the fasciæ and between tendons and muscles, where it defies the most skilful and daring surgeon.

Need it be said, that suppuration of the vaginiform bursæ is a thing to be religiously avoided, that it is always dangerous, and too often fatal. Mr. Johnson warned the pupils against puncturing these bursæ, or resorting to any measures calculated to give rise to

inflammation in them. He mentioned some cases illustrative of the dangers of operative interference with them, and deprecated it in the most earnest terms. At the same time he advised, if suppuration did occur, as prompt and as bold an opening as could be ventured on.

The principal object, however, of this report, is to point out the advantage of puncturing the subcutaneous vesicular bursæ, especially that on the patella, when enlarged from simple increase of secretion, without much inflammatory action, or consolidation of their walls. The plan adopted by Mr. Johnson consists in introducing a grooved needle, perpendicular to the surface, into the cavity, the bursa being rendered prominent and tense by properly directed pressure. The needle having entered the cyst, its convex side is kept pressed against the sides of the opening, which, of course, tends to free the groove from obstruction, and to render the channel more patulous The exit of the fluid is assisted by maintaining firm compression on the swelling, and holding the handle of the needle low, so as to direct the stream downwards. In this manner, without pain, and with great rapidity, the bursa is emptied of its fluid.

A dose of senna is directed to be taken immediately, its repetition is prescribed as circumstances may require, and the patient is ordered to apply a blister to the knee so soon as he reaches home, or, at all events that evening. He is cautioned against more exercise that day than is absolutely indispensable, but no other restriction is usually insisted on.

[In slight cases, one puncture, and a blister or two, followed by strapping and a bandage when the effusion has nearly disappeared, are usually sufficient for a cure. But when the case is of longer standing, or the disease has proceeded further, a repetition of these means is required.]

Lancet, July 26, 1845, *p.* 107.

165.—*Removal of Tumors by a Flap Operation.* By JOHN CHIPPENDALE, Esq., London. [Every practical surgeon must have noticed the facility with which a tumor loosely connected with the parts on which it rests can be raised, and also that this facility is diminished when the skin is dissected off it. By the ordinary mode of incising, the operation becomes converted into a digging; this is proposed to be remedied by using a flap. The mode in which Mr. Chippendale operated in a case of this sort, is best described in his own words, as follows:]

Raising the tumor as far as I could from the body with one hand, I passed a long narrow knife under the skin near the border of it, in the direction of its long diameter; having cut through the connexions at its base, and the edge of the knife having arrived at the opposite border, it was turned towards the surface of the body, and the skin severed. The whole was now turned out, and the tumor dissected from the flap thus formed, with the greatest facility. The few vessels which bled had ligatures applied, which, in a quarter of

an hour, were again removed; the flap was laid down on the wound with two points of suture in the long side, and the edges secured with adhesive plaster; the whole was healed in a few days, leaving a scar representing three sides of a rectangular parallelogram as thus [.

The skin, when thus divided, so soon shrinks, that it can seldom be necessary to take any portion of it away; but should a case occur where such a proceeding became necessary, a portion could be taken from the free border of the flap, so as to make it fit the exposed surface, as parts are brought to coincide in autoplastic operations. At any rate, there would be but two incisions of the skin, as in ordinary eases where a portion is removed, and where the incisions are made in the form of arcs of the circumference of a circle in this manner (), and my plan has this advantage, that the cutting is from within towards the periphery, which is certainly attended with less pain than when effected in the opposite direction. The knife should be passed parallel to the long diameter of the tumor if possible, because this measure secures the smallest circumference to the flap, takes less time to cut, and diminishes the chance of having to take away any portion of the skin.

It may be objected, that when a tumor is lifted from the body by means of the skin, its base does not represent a plain surface, but a portion of a sphere; this I think of no consequence, for it would be no obstacle to one accustomed to guide the knife; and with others, the worst that can happen will be that a small segment will be left adherent to the bottom of the wound, which can be after wards dissected away.

Lancet, August 16, 1845. *p.* 177.

166.—*Mode of Inserting Issues.* By T. G. Geoghegan, Esq., M.D., &c. The property with which the cuticle is endowed, of resisting to a certain extent the action of potassa fusa when applied as an escharotic, suggests a modification of the ordinary mode of inserting issues which will be found to possess some advantages in practice. Whether the method about to be described be (as I believe) a novel one, it is less important to inquire, than to ascertain if it possess advantages over the ordinary procedure sufficient to commend it to general adoption. If the changes which occur in the skin during the insertion of an issue be carefully observed, it will be seen that the cuticle gives way in *isolated circular* spots, which ultimately coalesce during the coutinuance of the friction, and that hence the caustic is applied in *succession* to a number of small patches of the *cutis vera.* This latter circumstance, together with the violent *stimulation* of the surface of the true skin in those points where the caustic has been *but imbibed* by the cuticle, but has, as yet imperfectly *penetrated,* conspires to render the operation more painful than is essential to its efficient performance. Reflecting on the foregoing facts, and on the *modus operandi* of potass in destroying the vitality of the skin, (which appears to consist chiefly, if not exclusively, in the avidity with which it seizes its consti-

tuent water), I have been led to adopt the application of kali to the surface of the *true skin denuded of cuticle by the application of a blister*. This method has approved itself of superior convenience and lenity in several cases in which I have resorted to it. The blister should be of *precisely* the same size as the issue to be inserted, and having been applied for the usual time, the cuticle should be gently but *completely* removed, and the superfluous moisture absorbed by a piece of lint, (the surface of the skin *not* being rendered *altogether* dry). The stick of potass should be then *passed once lightly over the entire surface, no friction whatever being necessary*. The operation is now complete, save the removal of superfluous potass by the *pressure* of a piece of lint applied after the lapse of about half a minute—a procedure which is, however, unnecessary, where due care has been observed in its application.

The caustic at once extends its influence into the substance throughout its entire depth, and the pain, which is of an active burning kind for some moments, rapidly subsides; and in a great measure, disappears in from 15 to 30 minutes, in the generality of cases. By the mode of procedure just described, the more prolonged pain and apprehension attendant on rubbing in the caustic, is avoided; and from the simplicity and facility of the operation, the latter may be administered in the guise of a stimulant application to the blistered surface without inflicting on the sufferer the formalities of an issue, or the horrors of expectation. The destruction of the skin to an unlooked-for and undesirable extent, which is so frequent by the ordinary methods, is entirely avoided by the proposed modification, and it will, if I am not mistaken, be found preferable in practice.

Medical Gazette, May 30, 1845, *p.* 202.

167.—ON THE ENDERMIC USE OF MORPHIA IN ARTICULAR CONTRACTIONS.

By A. T. Thomson, Esq., M.D., F.L.S., &c.

[Dr. Haygarth, in 1805, published an account of an arthritic affection, which he termed "Nodosity of the Joints." He described it as almost peculiar to women, as occurring at the period of cessation of the menses, principally affecting the fingers, and considered it an affection of the whole of the tissues composing the wrist, and near akin to gout. The joints were painful at night, often tender to the touch, swollen, and in old cases, sometimes actually dislocated.

Dr. Thomson has met with an affection much resembling this, which he has successfully treated by the endermic application of some of the salts of morphia. Cases of real nodosity he has also found much benefited by the same treatment.]

The disease, which is the subject of this communication, does not display itself at any particular period of life, nor is it confined to either sex. I have never seen it, however, in persons under the

age of puberty. It appears, in every instance, to be the sequel of repeated seqere attacks of acute rheumatism; and it has a greater affinity to inflammation of the synovial membranes, so graphically described by Sir Benjamin Brodie, than any other disease with which I am acquainted. It sometimes appears in many joints at the same time, but most commonly it is confined to the knee-joints. As it usually follows soon after the last of the attacks of rheumatism which have preceded it, the pain of the joint is referred to a recurrence of the rheumatic inflammation, although it is commonly confined to the inner side of the knee, and is only severe when the joint is moved. In a few days afterwards, however, the joint begins to swell, and the enlargement is accompanied with contraction of the flexor muscles, so that the limb assumes a semiflexed position, and cannot be stretched out without considerable pain. There seldom appears to be much effusion of lymph, and the evidence of the presence of fluid in the joint diminishes as the swelling progresses, and ultimately it seems as if the enlargement depended altogether on the deposition of solid matter. At this period, the joint loses its mobility, and every attempt to extend the limb is productive of intense suffering to the patient. The pain, however, when the limb is left at rest, returns now only in paroxysms, which occur chiefly in the night. Sometimes there is considerable tenderness on pressure, and it is impossible, without extreme suffering, for the patient to put the foot to the ground, so as to bear upon the limb; and this also occurs even when the limb is allowed to hang. I have never seen a case which terminated in dislocation of the affected joint; and although I have met with several cases of many years' continuance, yet I have never observed ulceration of either the cartilages or the bones of the joint. This affection is attended with little fever, or constitutional derangement, except where the patient has been exposed to cold, when the inflammation assumes an acute character. I am inclined, indeed, to think that the inflammation is usually of a chronic kind; and it only occasionally becomes acute from extraneous causes. I am fully aware of the difficulty of distinguishing between acute and chronic inflammation; but in the diseases under consideration, I have been guided by the degree of pain in the affected part; and the febrile action which accompanies its increase, in determining the existence of acute inflammation. Under such circumstances also, when blood has been abstracted, it has always displayed the buffy coat. This is especially the case when the elbows and wrists, as well as the knees are affected. As the pain is greatest in the night, the patient is often worn out for want of sleep, and as he cannot take exercise, he lies and doses the greater part of the day.

[The case of a lady of nearly sixty is mentioned, who for more than forty years had suffered under this complaint, in nearly every joint. Believing that no medicine will do her any good, she has refused to allow Dr. T. to exercise his skill.

Dr. Thomson having found very little benefit from the usual remedies in synovitis, and]

Reflecting upon the many disappointments that had followed my treatment of these cases, I was induced to think that much of the chronic inflammation was kept up by the pain, and if that could be reduced, and at the same time counter-irritation maintained, more permanent relief would be procured than had hitherto been the case. For this purpose I resolved to try the topical effect of the hydro-chlorate, or the acetate of morphia, the beneficial effects of which I had had several opportunities of witnessing in cases of *tic douloureux*, and in that phagedenic ulceration of the fingers, which occasionally occurs, and is extremely difficult of management. I blistered the affected joints, and sprinkled the blistered surface with either a grain or a grain and a half of hydrochlorate of morphia, night and morning. The application caused a sensation of burning on the part, which, however, soon subsided, and left the joint in a state of comparative ease; and, after a few days, it was susceptible of a small degree of motion without pain; so that, in some cases, the patient was capable of extending the limb freely, after the tenth or twelfth application. In many instances, a particular eruption attends the application of the salts of morphia, occasionally commencing at the most distant point from the affected part, and gradually extending over the greater part of the body. In such instances, the disease has yielded more rapidly than when no eruption appeared, and the general health has not been affected by it. The eruption disappears soon after the use of the salt is discontinued. General remedies were occasionally employed along with the topical means, but these were necessary only in cases where the general health required correction.

[A number of cases are then given, from which the following conclusions may be drawn.]

1. That in painful, swollen, and contracted joints, depending on rheumatism, or other causes, the topical application of hydrochlorate, or acetate of morphia, to a blistered surface, on the affected joint, is capable of reducing the swelling, abating pain, and restoring the motion to the joints.

2. That these salts seem to produce these beneficial effects, by reducing the sensibility of the nerves of the joint, and favouring absorption by their counter-irritant influence.

3. That they do not act as general narcotics, until the joints are relieved.

4. That they frequently excite a pustular eruption over the body; but this disappears spontaneously, soon after the use of the topical application is discontinued.

Monthly Journal of Medical Science, Oct. 1845, *p.* 774.

168.—*Exanthemic Liniment.* The following liniment is particularly recommended by Dr. Morris, when desirous of keeping up a mild rash upon the skin: ℞. Ol. crot. M. xx.; antim. tart., ℈j.; liq. potassæ, ʒj.; aq. puræ, ʒ vij. M., while Dr. Hannay, of Glasgow, considers ipecacuanha one of the most manageable and efficient

applications. His formula is pulv. ipecac. ol. olivæ, aà ʒij.; adipis. suill. ℥ss. M. It requires to be rubbed in for fifteen to twenty minutes, and is, he thinks, peculiarly adapted to cases of cerebral irritation in children, dependent on receded eruption.

Dr. Cowan's Address, Prov. Trans., Vol. 1, N. S., 1845, p. 108.

169.—*Mode of Diagnosing Buffy Blood.* Mr. Wharton Jones has pointed out a very ingenious method of determining whether the blood is buffy, or not, from the examination of a very minute portion of this fluid. It consists of quickly enclosing a drop between two pieces of glass, and observing with the naked eye the quickness with which it assumes a mottled appearance, and the smallness or largeness of the interspaces. In buffy blood the mottling is almost instantaneous and the interspaces large, while in healthy blood it is delayed for half a minute or more, and the reticulation is minute.

Ibid, p. 32.

170.—*Lupus Exedens.* Mr. Liston says that local treatment can alone be depended on in this disease. He thinks chloride of zinc the best application; it is to be mixed dry with an equal quantity of flour, and then moistened with a little water. When of the consistence of bird-lime, it may be spread on some lint; but the better plan is to put it on a spatula, dip your finger in water, and then lay it on with accuracy round the sore, and then over the whole of it. It subjects the patient to some pain, but that ceases after a time, and the paste becomes elevated at the edges. You will then find an extensive slough has formed; and immediately that separates, instead of the old eating ulcer, you have substituted a healthy granulating surface, the part furnishes good matter, and there is soon the commencement of cicatrization all around. The surface is then poulticed to remove the scabs; and, if, subsequently, any portion should continue to present an unhealthy aspect, the cauterization ought to be repeated.—*Dublin Hospital Gazette.*

Medical Gazette, Aug. 29, 1845, p. 789

171.—*Treatment of Porrigo.* By Dr. Corrigan, Dublin. Nothing is easier than to give the appearance of having cured the disease. It is merely necessary to poultice the head, or part it is on, when the scab all comes off, leaving a shining red surface, then to wash it, when it looks clean, and thus make it look as if cured. After many applications a week, fortnight, or month may pass over, but in all those instances where I had the opportunity of afterwards observing the case, the small favi began again to show themselves, and the disease then rapidly shot up again, and spread; indeed, so certainly was this the case, that at last I began to think the disease was incurable. Among the people themselves, this idea seems to prevail, for while they continue to make efforts for the cure of other affections of the skin, they submit to this as if it were an evil not to be

remedied. In some cases of adults that have come into the Fever Hospital, the patients have shown the greatest anxiety to conceal the existence of the disease, as if it were a stain of leprosy, and in such instances, on questioning, we have ascertained that the disease had existed, and without spreading, from childhood. To reflecting on the nature of the disease, I owe the thought of a remedy on which I place considerable reliance—it is the local application of oxymuriate of mercury, which has much power in destroying the sporula of cryptogamic plants. I have used it in the form of ointment in the proportion of five grains in very fine powder to ʒi. of ung. cetacei; I have used it in the proportion of 10 grains to ʒi., but it sometimes gives pain in this larger proportion. A small portion of the ointment is rubbed in on the part affected every day. It has not salivated in any instance in which I have employed it; its action in the first of the cases was peculiarly satisfactory, for the poor boy, the subject of it, could get no employment from the hideous appearance produced by the disease while it continued.

Dublin Hospital Gazette, Aug. 15, 1845, *p* 4.

172.—*Croton Oil Plaster.* M. Bouchardat recommends the following method of preparing croton oil plaster. Melt eighty parts of gum diachylon plaster at a very gentle fire, and, when it is semi-liquid, mix with it twenty parts of croton oil. The plaster which results is to be spread thickly on muslin. It will produce considerable irritation of the skin, and may be employed in all cases where revulsives are required. It does not cause such severe pain as many other counter-irritants; and it may be applied over an extensive surface, so that a derivative action may be established proportional to the irritation which is to be combated,—an indispensable condition in the employment of these heroic remedies. M. Bouchardat is fully of opinion that the croton oil plaster will be found available in the treatment of many chronic diseases, both of the respiratory apparatus and of the abdominal viscera."—(*Annuaire de Thérapeutique*, 1844.)

Northern Journal of Medicine, Oct. 1845, *p.* 306.

173.—*Essence of Camphor.* ℞. Tr. myrrhæ, ʒss.; sp. vini camph. ʒiss.; sp. vini rect., ʒiv. M. The myrrh renders the spirit of camphor miscible with water, without which it would be decomposed. To deprive the myrrh of its colour, add to it some animal charcoal. (About fifty drops will make a pint of ordinary camphor julep.)

The mode of administering camphor in suspension by mucilage, is entirely obviated, by the myrrh suspending the camphor in the minutest state of division, and in a perfectly miscible state.

Pharmaceutical Journal, Sept. 1, 1845, *p.* 121.

MIDWIFERY.

174.—ON PLACENTAL PRESENTATION.

By Robert Lee, Esq., M.D., F.R.S.

[As it is our duty, as recorders of the actual state and progress of medicine, to present our readers with both sides of the question, in cases in which a variety of opinion exists, we proceed now to give an account of Dr. Robert Lee's views on the treatment of placental presentation.

After remarking that the most distinguished practitioners from the days of Ambrose Paré to the present time, have universally recommended and practised turning in placenta prævia, Dr. Lee remarks,]

It does not appear that any of these great practical accoucheurs attempted in a single instance to tear away or detach the placenta from the neck of the uterus, when it was so undilatable as to render it impossible to pass the hand to turn the child and deliver, nor in any other condition whatever of the part, before the birth of the child; and none, I am firmly convinced, but the most rash and inexperienced, would have recourse to a plan of treatment which offers no advantage to the mother, and would be followed by the certain destruction of the child. When the placenta is wholly separated and expelled from the uterus, it can then be of no further use either to the mother or child, and ought to be removed.

The Statistical Tables which have recently been published by Dr. J. Y. Simpson, for the purpose of proving the propriety of detaching the placenta from the neck of the uterus, and extracting it before the child, however imposing in appearance, furnish no evidence to justify any practitioner in departing from the rule which has been established in the treatment of cases of placental presentation during the last two hundred years.

The following is the first of these Tables:—

Tables of Maternal Mortality in Placental Presentations.

Reporters.	No. of Cases.	Mothers lost.
Mauriceau - -	17	3
Giffard - -	24	7
Smellie - -	17	3
Rigby - -	42	12
Clarke and Collins -	15	3
Busch - -	13	2

Schweighhauser -	64	16
Lachapelle - -	16	10
J. Ramsbotham -	19	8
F. Ramsbotham -	44	8
Lever - -	14	2
Lee - -	38	14
Wilson - -	26	10
London Maternity Charity	50	33
Total -	399	134

There are several great inaccuracies in this table: but it will suffice at present to point out the last, relating to the mortality in the Royal Maternity Charity, which the following letters from Dr. F. H. Ramsbotham do so completely.

"My Dear Sir,—In answer to your note received last evening, in which you say that in a table of cases of placental presentation published by Dr. Simpson, he has stated that forty-four were observed by me, and that, of these, eight proved fatal; that fifty also occurred in the Royal Maternity Charity, of which thirty-three proved fatal: I must observe that Dr. Simpson has fallen into an error in transcribing the results of my practice in this particular. From the tables which I have for many years kept of the cases that have occurred in *my* district only of the Royal Maternity, as published in an Appendix to the second edition of my work on Obstetric Medicine, you will find that there were fifty cases of placental presentation between the 1st of January, 1828, and the last day of December, 1343; and that out of these cases thirty-two children were still-born, I see I have not noticed the number of women that died under these circumstances; but I have stated, that out of the 126 *deaths from puerperal causes*, that happened during that period, fifty-six were either immediately or remotely the consequence of hæmorrhage. Dr. Simpson, has, then, it seems, mistaken the number of still-born children in the fifty cases for the number of deaths among the mothers, and by an error of the press, most likely, thirty-three was printed instead of thirty-two. In regard to the other forty-four cases, the particulars of them will be found in a note at p. 498 of the first, and p. 395 of the second edition of my book. They were cases of *partial* placental presentation, which I saw between the years 1823 and 1834—indeed all the cases of that kin that came under my *personal* observation in that interval. Some of these cases were afforded by the practice of the Maternity Charity, and therefore included in the other fifty; all all that occurred between January, 1823, and January, 1828, were observed in private practice, as well as many of those between 1828 and 1834. The object I had in view in giving the summary I did of these forty-four cases, was to show the advantage of rupturing the membranes in this kind of case, as well as in accidental hæmorrhage, instead of proceeding to deliver at once by turning. To ascertain the number of deaths in the fifty cases of the Charity above alluded to, I shall be obliged to go carefully over my tables

or the reports founded upon them, which I have from time to time published in the *Medical Gazette*, but I will do this, and let you have the result in three or four days."

Dr. Ramsbotham then adds that, after looking over his reports from 1828 to 1843, he finds "the total, 35,743 deliveries; and I find that out of the fifty cases, fifteen of the women died; eighteen of these were partial presentations. I look upon this as a greater average than we meet with in general practice: because these poor creatures have all the ills attendant on poverty in its worst forms, with, in many cases, a shattered constitution, to contend against; besides that, as the women are delivered by midwives, except when extraordinary assistance is required, I presume more time is lost between the last attack of hæmorrhage and the delivery, than would be the case were a well-informed obstetrical surgeon in attendance, who could deliver on the instant."

Dr. Simpson's views are founded on the singular and obvious fallacy, that, because in a certain number of cases, and these the most favourable for the ordinary treatment, in which the placenta came away spontaneously before the child, and the women recovered, the same good result should take place after the still organically adhering placenta has been torn away. This clearing away of the placenta was performed two hundred years ago by an ignorant and audacious impostor, on a lady who died in Paris, whose case is related, with denunciations of the practice, by Guillemeau.

Medical Gazette, Sept. 19, 1845. *p.* 895.

[In a subsequent communication, Dr. Lee publishes two additional cases where he adopted turning with success. In the first the orifice of the uterus was but slightly dilated, and apparently in a relaxed state, two fingers only could be got in without waste of time, a foot was seized, and the child gradually delivered. In the second, an immense gush of blood occurred when the child was extracted; but all flooding ceased on removal of the placenta. However, shortly after, hæmorrhage again occurred, and the patient was reduced to a most alarming state: coagula were found in the vagina, which were removed, but some time elapsed before the most active measures succeeded in warding off speedy death.

A letter from Dr. Merriman is given, in which it is stated that of seventy-eight cases which *he* had *met* with, and turning was performed, nineteen died; the number of deaths, he thinks, would have been much smaller if this practice had been sooner adopted.

According to Dr. Lee, eighteen cases of complete placental presentation occurred to Portal; seventeen were delivered by turning, and one only of the eighteen died, but we are not told whether that one was the case where turning was not performed, nor what was the practice then pursued.

Of nineteen cases observed by Giffard, the presentation of the placenta in six was complete, in thirteen partial. Seven of the children were born alive, and five of the mothers died after turning, from hæmorrhage previous thereto. This was the cause of death in

most of the fatal cases recorded by Dr. Merriman, Portal, and Mauriceau, and these authors all agree in opinion that if turning had been earlier adopted, many more of the mothers might have been saved. Great stress is laid by Dr. Lee on the fact that seven children were saved by Giffard, but was the risk to the mothers worth the chance of saving the life of the children?]

Medical Gazette, Oct, 10, 1845, *p.* 1019.

[It is generally believed by Dr. Simpson that in hæmorrhages before or during labour, the blood comes from the exposed *uterine* orifices.]

It is (observes Dr. Lee) from the great semi-lunar, valvular-like, venous openings in the lining membrane of the uterus, which you have seen in various preparations, and of [from] the arteries which are laid open by the separation of the placenta, that the blood alone flows in uterine hæmorrhage.—Lectures on Midwifery, p. 361.)

[On this Professor Simpson says,]

But arteries, particularly when they are so long and slender as the utero-placental arteries are, do not give rise to any marked degree of hæmorrhage when they are lacerated or *torn* through; and bleeding does not readily occur from the venous openings exposed on the interior of the uterus, because venous hæmorrhage by *retrogression* (which the blood escaping back into the uterine cavity would be) is here prevented by a variety of anatomical and subsidiary means, which I have elsewhere taken occasion to describe at some length.

In the passage that I have quoted above from Dr. Lee's published Lectures, Dr. Lee does not allow that the blood, in uterine hæmorrhage, proceeds in any degree from the open venous orifices existing on the surface of the separated portion of placenta, the discharge proceeding, in his opinion, from the exposed *uterine* surface "alone." But I know of no reason, anatomical or otherwise, for alleging that the open *placental* orifices do not bleed; and, on the contrary, I believe with Dr Hamilton and others, that the discharge issues principally or entirely from the vascular openings which exist on that exposed placental surface. These placental orifices are not, like the uterine, surrounded by contractile fibres capable of constricting them; they are in free communication with the general vascular system of the mother through the medium of the maternal vascular, or cavernous system of the placenta: and the blood in that cavernous system escapes readily from the exposed venous orifices on the surface of the placenta—that being, in fact, so far, its natural and *forward* course.

In cases in which the placenta is partially and repeatedly detached before labour begins (as happens frequently in placental presentations), before each attendant attack of hæmorrhage is arrested, the vascular system of the separated portion of placenta seems to require to become blocked up and impervious, with coagu-

lated and infiltrated blood. This obliteration of its vascular cells prevents the further circulation of maternal blood through the detached part of the organ, and hence prevents also the further escape of it from its exposed surface. Each new detachment gives rise to a renewed hæmorrhage, which again ceases on the sealing up of the vascular system of the detached part. A few cases of placental presentation are on record in which there was *no* attendant hæmorrhage when labour supervened, the tissue of the placenta having, throughout the whole organ, previously become so morbidly changed, obstructed, and impervious, as not to have any quantity of blood circulating in it and ready to escape, when at last its surface was separated from the interior of the cervix uteri under the occurrence of the uterine contractions.

In common cases of unavoidable hæmorrhage, the amount of the attendant flooding seems to be as much regulated by the quantity of placental surface *still* remaining attached to the uterus, as by the quantity *already* separated from it—the degree of flooding depending as much, or more, upon the extent of the means of supply of blood as upon the extent of its means of escape. And in proportion as we approach nearer and nearer a *total* separation of the placenta, the number of its *afferent* utero-placental vessels is diminished, till at last we find that when the one organ is once completely separated from the other, the flooding is instantly moderated, or entirely arrested; for the placenta ceases to yield any discharge of maternal blood, as soon as its own supplies from the maternal system are thus cut off by the disseverment of all its organic and vascular attachments with the uterus.

Dr. Simpson shows, from previous tables of Drs. Lee and Ramsbotham, that 61 cases, 24 of the mothers died, making a mortality of more than one in three, or 35 per cent.]

The great mortality resulting from the treatment of turning in placental presentation, may be more strongly shown to some minds if the fact is stated in another form. In order to ascertain the fatality of the Cæsarean section abroad, Dr. Churchill collated with much care the histories, from foreign authorities, of 371 cases of the operation. Out of these 371 cases, 217 mothers recovered, and 154, or nearly one in every two and four-tenths died. (Midwifery, p. 318.) This is exactly, and to a fraction, the degree of maternal mortality accompanying turning in placental presentations, in the cases reported by Dr. Lee, in his Clinical Midwifery. *In other words, the success of turning in unavoidable hæmorrhage, in Dr. Lee's private and consultation practice* (as reported in that work) *has not been greater than the reputed success of the Cæsarean section upon the continent of Europe.*

When we see that the results of turning the child in placental presentations are so very mortal in the hands of two such distinguished accoucheurs as Dr. Ramsbotham and Dr. Lee, what degree of success can we expect to follow it in the hands of the general mass of medical men.

Last year Dr. Lee most truly and justly remarked of turning in placental presentation, "*At the best it is a dangerous operation*, and you can never tell with certainty whether or not the patient will recover after its performance, however easily it may have been effected." (*Lectures*, p. 373.)

Secondly.—Dr. Lee seems to argue as if I recommended the artificial detachment of the placenta in *all* forms of placental presentation in which turning is at present adopted. On the contrary, I have explicitly mentioned it as a mode of treatment to be adopted when rupturing of the membranes is insufficient, and turning is either inapplicable or unusually dangerous I believe it will be found, for instance, the proper line of practice in severe cases of unavoidable hæmorrhage complicated with an os uteri so insufficiently dilated and undilatable as not to allow, with safety, of turning; in most primiparæ; in many of the cases in which placental presentations are (as very often happens) connected with premature labour and imperfect development of the cervix and os uteri; in labours supervening earlier than the seventh month; when the uterus is too contracted to allow of turning; when the pelvis or passages of the mother are organically contracted; in cases of such extreme exhaustion of the mother as forbid immediate turning or forced delivery; when the child is dead; and when it is premature and not viable.

The operation of turning and artificial delivery, in unavoidable hæmorrhage, with the os uteri imperfectly dilated, would, from these and other cases, appear to be more deadly than any operation that is deemed justifiable in the whole circle of surgery. It is more mortal even than Ovariotomy.

I believe, on the other hand, that in the above and similar cases, by the introduction of a finger, or of a common sound or bougie, (such as Dr. Hamilton employed when the os uteri was still shut, and in order to separate the membranes for some inches from the cervix, in order to induce premature labour), the placenta might be readily and completely detached—the attendant bleeding in this way arrested—and the labour subsequently allowed to proceed to a natural and safe termination, if it were a head or pelvic presentation. And if the child were placed transversely, a more safe and and proper period could be waited for, and selected for the version of it.

Medical Gazette, Oct 10, 1845, *p.* 1009.

[Dr. Lee examines the table of Dr. Simpson, published in the *Medical Gazette* for Sept. 19, and proceeds to say]

In examining this table, the first circumstance which cannot fail to strike every one at all acquainted with the subject, is the omission of Portal's 18 cases, of which only 1 proved fatal. The next circumstance is, the prodigious mortality said to have occurred in the London Royal Maternity Charity, to which Dr. F. H. Ramsbotham is physician. Thirty-three of 50 cases which are stated to have occurred, proved fatal. Mauriceau is represented in the table

to have reported 17 cases, three of which were fatal, the well-known fact being suppressed, that 1 of these 3 women died undelivered, because she would not permit the usual treatment to be adopted. Giffard is said in the table to have reported 24 cases, of which 7 proved fatal; 5 being the actual number of deaths, and 19 the number of cases. Smellie is made to report 17 cases, 3 of which were fatal; while Dr. Churchill states that Smellie has reported 24 cases, 8 of which were fatal. Busch is stated to have recorded 13 cases, 2 of which were fatal, the fact being omitted to be mentioned, that "these two cases proved fatal to the mother where there had been great delay in sending for assistance." Of Schweighauser's 64 cases, I have not yet succeeded in finding any report.

Dr. J. Ramsbotham is represented in the table to have reported 19 cases, 8 of which died. This is copied from Dr. Churchill's table; but Dr. F. H. Ramsbotham thought it right, when Dr. Churchill published his Midwifery, to caution the profession against receiving his tables as statistical evidence, because of the manner in which they were compiled. "I then objected," he says, "strongly to my father's cases, as published by him, being used in such a way as Dr. Churchill has done. The 19 cases were selected from a much greater number, the details of which were not published, and Dr. F. H. Ramsbotham therefore justly concluded, that it was most deceptive to take his father's cases as a portion of the data from which to build up a system of statistics." This caution to the profession has not, however, prevented Dr. Simpson from stating in his table, that 19 cases had been reported by Dr. Ramsbotham, 8 of which proved fatal, as if this had been the average number of deaths in his practice. The same remarks apply with equal force to the average mortality said to have taken place in my practice.

Again, it is said that in the London Maternity Charity 50 cases occurred, 33 of which proved fatal; the simple fact being, that 32 children were still-born. "Dr. Simpson has, then, it seems, mistaken," says Dr. Ramsbotham, "the number of still-born children in the 50 cases, for the number of deaths among the mothers; and, by an error of the press most probably, 33 was printed instead of 32.

There can now be no longer any difficulty in determining how much reliance is to be placed on Dr. Simpson's statistics, and whether he has been sufficiently impressed with the importance of "observing the most rigid accuracy, the most scrupulous regard to truth, in forming statistical tables, from which it is proposed to adduce proofs in support of an attempt to subvert the established rules of practice in the treatment of cases of such vital importance, and substitute another mode of treatment which is of the most dangerous character, fraught with inevitable destruction to the child, and attended with no benefit to, if not actually increasing the danger of the mother.

"In proportion to the imposing effect which figures give to

arguments, so ought to be our jealousy in regard to the correctness of the data on which numerical calculations are founded. If correct, we are furnished with a safe and steady stepping-stone to truth; if incorrect, we are confounded by the sudden yielding which takes place, and get involved in a slough of error."

But of all the misrepresentations made by Dr. Simpson, the following is probably that which will strike the reader as the most extraordinary and astounding. "The great mortality resulting from the treatment of turning in placental presentations," he says, "may be strongly shown to some minds if the fact is stated in another form. In order to ascertain the fatality of the Cæsarean section abroad, Dr. Churchill collected *with much care* the histories from foreign authorities of 371 cases of the operation. Out of these 371 cases, 217 mothers recovered, and 154, or nearly one in every two four-tenths, died. (Midwifery, p. 318.) This is exactly, and to a fraction, the degree of maternal mortality accompanying turning in placental presentations in the cases reported by Dr. Lee in his Clinical Midwifery. In other words, the success of turning in unavoidable hæmorrhage in Dr. Lee's private and consultation practice, (as reported in that work), has not been greater than the reputed success of the Cæsarean section, on the continent of Europe."

[Dr. Lee then gives a table (for which see *Medical Gazette*,) of all the cases of placental presentation which he has seen, and of which he has preserved the histories. The number of cases is 45.]

Dr. Simpson, who professes to know the number of cases which I have seen much more accurately than I do myself, says the number is 46, not 45. If the cases of partial placental presentation exceeded 4 in number, which I have referred to at page 149 of my Clinical Midwifery, and which were all safely completed without the operation of turning, be added to the 46, the actual number of cases of placental presentation, which I have seen, will amount to 50.

From this table it will be seen that 1 woman died undelivered, and that 3 others died on whom the operation of turning had not been performed. Of the 10 cases which terminated fatally after the operation of turning, it will be seen that three women died of uterine phlebitis long after delivery,—a circumstance which could not be justly attributed to the operation. In a fourth case of turning it will be seen that the uterus was lacerated in consequence of the great distortion of the pelvis. In a fifth case the patient was in articulo mortis before the operation was commenced. It is impossible to attribute the fatal result to the operation of turning in more than 6 of these 10 cases, and if the circumstances of these 6 cases be examined, it will be obvious that death could not have been averted by any other mode of treatment, and that if turning had not been performed, they would all have died undelivered.

In these 50 cases it will be seen that the operation of turning was performed only 27 times. Of these 27 cases there were 19 only in which I myself performed the operation, the other 8 patients having been delivered by other practitioners. Of the 19 cases in which I delivered by turning, it will be observed that 4 terminated fatally. There were four deaths, it is true, in these 19 cases of turning, but one of the women, it will be observed, was moribund before the operation was undertaken; and in a second, before I was called into consultation, so much blood had been lost that she died soon after delivery. A third woman, to whom large quantities of ergot of rye had been given before I saw her, and delivered her by turning, died ten days after from uterine phlebitis—a result which could not be attributed to the mode of delivery. The fourth case proved fatal in consequence of the great rigidity of the os uteri, which rendered turning impossible until she was in a state of complete insensibility from the loss of blood. The mortality, therefore, instead of being 1 in 2 4-10ths, was virtually less than 1 in 9.

Of the last 16 cases of placental presentation which have come under my own immediate care in succession, it will be observed from the table *that not one woman has died*. I cannot forbear pointing to this fact, that not one death has taken place in the last 16 women with placental presentation, who have come in succession under my own immediate care, and the treatment of whom was solely conducted by me. In 8 of these 16 cases the delivery was accomplished by the operation of turning. It is certainly with feelings of the highest satisfaction that I refer to this fact in contradiction to the statements made on this subject in the last Number of the *Medical Gazette*. The members of the medical profession cannot fail to perceive that I have a much higher motive than any of a personal nature in calling their attention to this fact in so pointed a manner; and it cannot fail likewise to be observed that I have carefully excluded from these remarks all irrelevant matter.

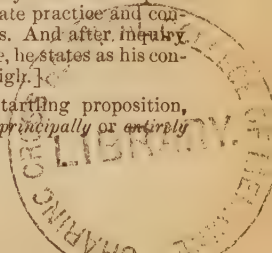
Medical Gazette, Oct. 24, 1845, *p.* 1108.

[Dr. Ashwell's opinion on this important subject is not in favour of a prior removal of the placenta, in preference to turning, and it is certainly entitled to great weight from the extensive practice which he has enjoyed. He premises that,]

The necessity for disturbing the existing practice arises from the *assumed great fatality to the mothers attendant on turning the child prior to the removal of the placenta.*

[This Dr. Simpson states as one in three. Dr. Ashwell however cannot believe this to be correct, for out of twenty cases of complete placenta prævia which he has met with in private practice and consultation, he has only lost two of the mothers. And after inquiry amongst accoucheurs largely engaged in practice, he states as his conviction, that this rate of mortality is far too high.]

I come now, says Dr. A., to the novel and startling proposition, "that in placenta prævia the discharge issues *principally* or *entirely*



from the vascular openings which exist on the exposed placental surface." Dr. Simpson says, "he knows no reason, anatomical or otherwise, for alleging that the open placental orifices do not bleed." It would have been well if these orifices and their capacities had been demonstrated. I have never yet seen them, although I have subjected numerous placentæ to examination, both before and after injection: nor have I been more successful when I have carefully peeled off an adherent placenta after death. It is, on the contrary easy enough to shew to the satisfaction of the most incredulous, the great openings existing in the lining membrane of the uterus, exactly opposite the attachment of the placenta, and which are covered by interposed decidua. Into many of these the tip of the finger may be inserted, while their course and extensive communications with the uterine sinuses, full of blood, is evident at a glance. Surely such an organization affords the clearest proof of the source of the hæmorrhage in placenta prævia. By some unfortunate accident the placenta and the intervening decidua are detached, and as the uterus is full of blood, there is no barrier to prevent its escape; in moderate amount if the detachment be slight, but excessive in quantity if the separation is considerable, and attended with excitement and hurry of the heart's action.

The most carefully made injections of human placentæ testify to the fact, that their vessels are innumerable and small; just what might be supposed, from the purposes they serve. The fœtal economy at no time requires such a supply of blood as must of necessity be furnished if vessels or orifices existed in the placenta capable of pouring out the vast quantity of blood which sometimes, after one, gush, proves fatal to the mother in placenta prævia. I do not believe that the placenta *ever* contains anything like the quantity of blood which is often lost in one or two gushes at the commencement of a placental labour. A few days ago I subjected a placenta, expelled immediately after the birth of the child, to the firmest pressure I could make, without obtaining from it more than two or three ounces of blood; and often I have made sections of this viscus without discovering more than the blocking up, by partially coagulated blood, of its sponge-like passages. A further corroberative proof of the little probability of bleeding, when the placenta is partially detached, is furnished by the fact, that extensive puncture of its substance by the trocar, when in apposition with the uterus at its fundus, or when implanted over the os, is not followed by hæmorrhage.

I shall conclude by a few strictures on the new practice. These I should not have made if the subject had been less important; but it is not a dispute about a mere dogma in physiology, or an obscure point in fœtal organization; it is a recommendation to do something which, I believe, is very rarely required to be done, and which will often be accomplished at great risk, and not unfrequently with certain injury to the mother, and invariably with the loss of the life of the child.

As I am especially urging the limitation of a practice which has, I fear, far more of novelty than of safety for its recommendation, I

mention with pleasure, that my friend Dr. Simpson does not press its universal adoption. But it is almost certain that tearing away the placenta through an aperture too small to admit the tip of the finger, for the purpose of gentle and gradual dilatation, will not often be either easy (if even practicable) or free from danger. For my part, I can scarcely understand how, through a rigid, small os uteri, the often-times bulky, and, according to Dr. Simpson, highly vascular placenta, can be brought without incurring the certainty of large hæmorrhage. *I can suppose*, that when the liquor amnii has fully escaped, and the placenta has been, whether safely or not, removed, further hæmorrhage may be stayed by contraction; for, as the uterus has thus got rid of a considerable portion of its contents, contraction to a greater or less extent will of necessity ensue, the restraint of further bleeding being thereby secured. But s there no danger in this meddlesome midwifery? Is there no risk that the finger-nail, the common sound, or the bougie, as recommended to be used by Dr. Simpson, may wound the devoloped and highly vascular cervix, originating excessive hæmorrhage at the time, or protracted bleeding afterwards? If all this may be safely done, why may not one finger, used as a dilator, make way for the introduction of a second, and a third, and, eventually of the whole hand, for the purpose of turning? I have often commenced the process of dilatation when the ring of the os uteri has seemed as hard and as rigid as cartilage, and yet in no instance have I failed, and generally in a moderate time, to accomplish a full and safe dilatation; thus affording to the child at least, and, as I think, to the mother also, a higher chance of life, and greater immunity from danger. The generally fatal cases are those where one or two large gushes at once deprive the mother of almost all chance of life; or where the repetition of hæmorrhage has been disregarded too long; where, as in the middle or higher classes, early and vigilant attendance is afforded, the favourable moment for commencing dilitation may usually be seized

Medical Gazette, Nov. 7, 1845, *p.* 1196

[Mr. Newnham, of Farnham, has communicated the result of his experience in the treatment of this form of presentation. He appears to have been equally successful with Dr. Ashwell, having lost only one of the mothers out of thirteen cases; the remaining twelve having recovered perfectly. He attributes his success principally to the practice of ascertaining as early as possible whence the blood flows, and then, if it be from presentation of the placenta, turning immediately, if practicable; if not so, using every means to dilate the os uteri, and then turning as soon as this object is effected.

We cannot wonder that a practitioner who has been so successful with the old established practice, should view with distrust the, at the best, hazardous mode recommended to supersede it. Yet he says candidly,]

Nevertheless, I can conceive of cases complicated with placenta

prævia, as in narrow pelves, or any other case in which the head is presenting, and it might be ultimately necessary to diminish the size of that head: I can conceive of such a case, in which the early detachment of the placenta might give the opportunity for employing the perforator and crotchet, and might thus afford a valuable resource in circumstances of extreme difficulty. But this is an exceptional case, and the rule must not be deduced from it. In cases, therefore, of *necessary* hæmorrhage, the *rule* must still be, turn and deliver as soon as circumstances admit; but when circumstances render this rule impracticable, it is a comfort to be able to fall back upon another practice with the conviction that it may be hopefully employed.

Medical Gazette, Nov. 14, 1845, *p.* 1257.

[A discussion has lately taken place on the subject, at a meeting of the Medical Society of London. Dr. Golding Bird seemed rather inclined to favour the new practice, as did Mr. Crisp, but Mr. Dendy Mr. Hadland, and Dr. Chowne, condemned it as unsafe and imprudent. The latter gentleman remarked that]

He considered it necessary to recollect that, under the one and same designation (placental presentation) ought to be included cases combining different sets of circumstances, each suggesting a different treatment: as, for example, the medical man might find the placenta detached and in the vagina, in which case he would at once promote the entire removal of it; or, he might find the placenta so placed that part of it extends over the os uteri detached, the other part adhering; the labour pains may be vigorous and frequent, giving the assurance that the delivery would proceed favourably, and that the child, in its progress, would, by pressure, arrest the hæmorrhage. Such cases not unfrequently occur, and the whole process of parturition proceeds as in ordinary cases, and ends well. In other cases, the placenta may be similarly placed, and hæmorrhage be going on, but without pains. Such is a case in which the question of whether to adopt the plan of detaching and removing the placenta first, or whether to turn, would arise. He still considered that in such a case it would be proper to adopt the latter mode. It was true that many cases were detailed in which separating the placenta, and bringing it away, had been followed by the cessation of hæmorrhage, and the safe delivery of the patient; but he did not think that the practice must be considered essentially proper and safe merely because the dangers to which it was liable had not occurred. He considered that the greatest degree of safety would be given to the mother by adopting that practice which would afford to the uterus the earliest possible opportunity of contracting with the least possible disturbance of that portion of the placenta which remained undetached. Cautiously introducing the hand, and turning, he regarded as most likely to accomplish these objects. Of the success of that practice his own experience had afforded him entirely satisfactory proof, and he felt assured, that such practice, if not too long deferred, would in the aggregate be followed by the happiest results. He did not con-

sider that in pursuing the opposite plan we could calculate upon there being anything in the mere separation of the placenta from the uterine surface, that would arrest the hæmorrhage; that arrest must depend on the contraction of the uterus; and over the process of contraction we have, comparatively, no control. It is true that labour having once commenced, it generally proceeds, and the desired contractions taking place, the vessels which had bled ceased to bleed, and all ends well. And, moreover, in many instances, a moderate degree of contraction will be enough to close the bleeding vessels. The cases that had been adduced in favour of separating the placenta were, in most part, such as these, but it was not enough to enquire, whether a practice is correct with regard to any *one* of a series of events, without considering also what may be the effect in *other* or *others* of the series; removing the placenta, for instance, might have a successful issue, where labour in all other respects but that of the malposition of the placenta is healthy and prosperous, and may therefore seem to be the proper proceeding, but it is necessary to inquire, whether the same result would have followed had there been not one difficulty only, but two or more difficulties; as for instance a relaxed habit, deficiency of power, and absence of pains, when, after the removal of the placenta, the uterus does not act favourably, but is dilating and inactive? Under these circumstances, the removal of the placenta will have laid bare the orifices of more bleeding vessels, while the retention of the child in utero, and the absence of pains, would conspire to prevent that contraction on which the patient's safety depends. However true it may be that in ordinary cases of hæmorrhage after the birth of the child, when the placenta remains and is adherent, cessation of hæmorrhage generally follows separation and removal of the placenta, yet there are many exceptions to this rule. On the whole Dr. Chowne, considering that to be the best practice which constituted the best safeguard in the event of unfavourable after-events, continued at present to prefer, as a general rule, when hæmorrhage was proceeding, in cases such as those to which the discussion referred, the removal of the child from the uterus, leaving that organ free to contract, and to reduce itself to the utmost possible extent, with the least possible loss of time.

Medical Gazette, Oct. 10, 1845, *p.* 1041.

[In conclusion we will add several interesting cases on this subject. The first is by Dr. Maclean. Mrs. M. æt 37, mother of seven children. Having usually had lingering labours, she did not send for early assistance this time; but on the second day of labour, at three o'clock in the morning, blood coming away with the pains, Dr. Maclean was sent for. As he was unable to attend, Mr Woodhead went, and found the os uteri dilated to the size of a shilling, with a soft substance presenting, from which there was an oozing of blood, increased at each pain. An opiate was given, and the hemorrhage soon checked by the usual means. At half past twelve she was seen by Dr. M., who found the os uteri dilated to the size of

half a crown, with the placenta protruding an inch and a half. The hemorrhage had produced so much faintness and collapse that a fatal termination seemed inevitable; and the pains, which had become frequent, had no effect on the os uteri.]

Having ascertained by the stethoscope that the child was dead, and Mr. Woodhead being again in attendance with me, it was at once agreed upon in consultation, (the mother alone requring our immediate attention, and the state of collapse to which she was reduced rendering the forced delivery by turning exceedingly dangerous, whilst the evacuation of the liquor amnii had entirely failed even to moderate the hemorrhage), that I should immediately endeavour to suppress the discharge by separating the whole body of the placenta from the uterine parietes, when the patient might be allowed to rally a little before removing the child, supposing the views of Dr. Simpson to be correct. Accordingly, having administered a small quantity of spirits with a few drops of laudanum to the patient, I immediately introduced my hand into the womb so as to remove the placenta. This I was easily enabled to do, after dilating the os uteri, by pressing down the placenta, with the fingers introduced behind it into the palm of the hand. A few minutes were sufficient to effect this; and I was much gratified to find all hemorrhage cease, as soon as the whole placental mass was detached. The placenta being carried down into the vagina, a dose of ergot was administered, and in about a quarter of an hour the natural pains expelled the child. There was no after hemorrhage, and only slight lochial discharge.

The mother recovered without the slightest drawback, and was out of bed in a few days.

Northern Journal of Medicine, Aug. 1845, *p* 132.

[Mr. Wilkinson, of Spalding, gives the following case.]

I was on Saturday, the 7th of June, at twelve p.m., called to a patient, a distance of five miles from this place, and whom I had not previously known. I found her almost in a state of syncope. On enquiry, I ascertained that she was between six and seven months advanced in pregnancy. Three weeks previous to my being sent for there had been, I was informed, very great hæmorrhage, which had continued, more or less, up to the time of my seeing her. On the evening of the 7th it had been very considerable; and previously to my seeing her, excessive, I found the os uteri dilated to the size of something less than a five-shilling piece; the placenta presenting; the hæmorrhage excessive; the pains very feeble; she was greatly exhausted; the pulse scarcely perceptible; the countenance blanched, and I felt that she must sink. I directed some brandy and water to be got down immediately and also a scruple of ergot of rye. I passed first three fingers, and with as little delay as possible, the whole hand, into the uterus; the gush of blood was at first great; the placenta, however, was quickly and completely detached, and the hæmorrhage *almost at once* ceased. I waited a while

with my hand in the uterus; I then brought away the placenta, and immediately re-introduced my hand, with a view of bringing on contraction. The head of the child presented; I turned; but feeling that my patient was not in a state to bear immediate delivery, I waited an hour and a half; she then having somewhat rallied, I delivered. She remained during the two first two or three days in a most exhausted state, from which, however, she gradually recovered.

I feel satisfied, had the usual plan been adopted in this case, so great had been the hæmorrhage previously to my seeing her, she must have sunk; and my chief reason for sending you a report of it is, that I do think many lives may be saved by the more general adoption of the plan recommended by Dr. Radford and Professor Simpson. In this case I have no doubt it was the cause of the preservation of the patient,

Provincial Medical and Surgical Journal, July 23, 1845, *p.* 471.

[The next case is by Mr. Tennent, of Brighton. Mrs. N., aged 42, seized on the tweltfh of January, with violent uterine hæmorrhage, which was arrested with ease. Eight days after the same happened to a less degree, but soon ceased likewise. On the 30th January, at 3 o'clock in the afternoon, profuse flooding again occurred, when Mr. Tennent being called in by Mr. Dix, found the patient much exhausted from loss of blood, entirely free from pains, and the os uteri not dilated sufficiently to admit the point of the finger. The flooding was soon stopped by persistence in the means ordered by Mr. Dix, but recommenced at half-past 10 o'clock the same night. The os uteri now admitted the finger, and the placenta and head of the child felt presenting. In order to induce pains, ʒ ss. of secale cornut. was given every half-hour for three times, but without producing this effect, though it stayed the hemorrhage for a few hours. When this recommenced Mr. Dix was sent for, but flooding ceased before his arrival.]

Mr. Dix, whose long and extensive practice,—especially in this particular branch of the profession,—entitles his opinion to the highest consideration, still recommended non-interference, trusting that some refreshing sleep, indications of which were beginning to manifest themselves, would place the patient in a more favourable state for the operation of turning, should it be necessary. I again visited the patient about 12 at noon; she had slept for some time, and seemed greatly refreshed and full of hope. There had been no return of hæmorrhage, and slight pains had commenced about half an hour ago. The os uteri was dilated to the size of a crown piece. The placenta felt as if the blood had been almost entirely pressed out of it. The pains progressively increased in strength, pushing the placenta before the head, somewhat in the form of the unruptured membranes, whose place it in a great measure supplied, in dilating the external parts. In the event of a renewal of hæmorrhage to any important amount, while these pains continued, I de-

termined to remove the placenta; such, however, not occurring, nature was allowed to complete the labour. The placenta was expelled at a quarter past one o'clock; and the fœtus, by the next three pains, which occupied about ten minutes. The child seemed to be one of seven months fully, and must have been dead for some days. There was no post-partum hæmorrhage, and the patient recovered rapidly without one bad symptom.

Monthly Journal of Medical Science, June, 1845, *p* 427.

[Mr. Jones, of Llanfair, Montgomeryshire, communicates another case in which this plan was adopted with the most benificial results.

The patient was in labour with her sixth child, and had had almost uninterrupted flooding for four hours. When visited, the hæmorrhage had ceased, and all uterine action absent, but she was greatly exhausted, with a pulse of 130 or 140; almost speechless and slightly delirious. Stimulants were given, and an examination was commenced, but as soon as she began to rally, the hæmorrhage re-commenced with frightful rapidity.]

The os uteri was fully dilated, the membranes entire, the presentation of the head natural; and the placenta covered nearly two thirds of the os uteri. The hæmorrhage persisting, and there being now considerable uterine pains, I saw no time was to be lost. I accordingly, and without the least difficulty, insinuated my fingers between the adherent portion of the placenta and the uterus, and in less than a minute, the latter was freed of the placenta. I now administered a full dose of the tincture of ergot, which brought on strong expulsive pains, and the woman was delivered of a still-born child in one hour and thirty-five minutes after my entering the house. After the placenta had been extracted, I do not think she lost altogether more than a teacupful of blood; she recovered as soon as females generally do after an ordinary labour, excepting that she continued unusually weak for a considerable time, as was to be expected after the great loss of blood. She had had one similar labour before; the child was then turned with great difficulty, (her pelvis not being capacious,) peritonitis ensued, and she very narrowly escaped with her life, after a confinement to her bed of more than two months.

Lancet, September 27, 1845, *p.* 349.

[Mr. French, of Nantwich, gives the following case. Mrs. P., aged 36, had previously borne three children; labour natural and quick. When first seen by Mr. F., she had had slight hæmorrhage for six weeks previously, which was considered to be owing to presentation of the placenta. The os uteri was found dilated to the size of a crown piece, with a portion of the placenta projecting. Mr. French ruptured the membranes, and found the umbilical cord and left foot presenting. The hæmorrhage and pains ceased, and she fell asleep.]

At seven P.M. she had several stronger pains, and on a second examination I found the left foot, with the umbilical cord twisted

round it, projecting from the os externum. There was great hæmorrhage. I immediately endeavoured to bring down the right foot, but was unsuccessful. She now had a very strong expulsatory pain, and to my surprise and gratification the placenta was expelled, followed immediately by the *head* and body of a male child, which appeared to have been dead a day or two. No hæmorrhage succeeded, the uterus contracting, and since then the patient has done well.

Lancet, June 7, 1855, p. 645.

[Dr. Walker, of Chesterfield, has published the following:—The patient was 30 years of age, had had six children; former labours difficult. When first seen by Dr. Walker, she had been four hours in labour, and was in a most alarming state of exhaustion from hæmorrhage, the flooding increasing at each pain. The os uteri was found on examination fully dilated, a large portion of the placenta presenting, with either a shoulder or the nates, it was not ascertained which, on account of the attempt increasing the exhaustion and hæmorrhage. Having determined to remove the placenta, this was done by.]

Introducing my left hand, I completely and in one mass separated the placenta, which was immediately expelled with my hand into the vagina; after its complete removal, the hæmorrhage, which before was considerable, *entirely* ceased. At this time the pains were feeble, and not of frequent occurrence. At my next examination, I found that a hand had followed the placenta, and now presented at the os externum. With the usual precautions, version was easily accomplished, and the woman safely delivered of a still born child. The uterus contracted with tolerable firmness, and no further hæmorrhage supervened. On the day following I found my patient comfortable, though suffering slightly from the effects of the hæmorrhage, and in a few days she was perfectly recovered.

Provincial Medical and Surgical Journal, Sept. 3, 1845. p. 557.

[Mr. Greenhow, of Newcastle, gives another case where this mode succeeded perfectly. It is not the only one he has met with, but is rather remarkable from the placenta presenting in every labour, thirteen times running.

Mrs. L., aged 44, married at 18, all but the first child born at seven months, and only three living.]

In February, 1844, the placenta was found considerably separated the breech presenting behind it, the discharge excessive, and the patient much exhausted. By introducing the finger within the os uteri and making a circular movement, the placenta was altogether detached from its connexion with the uterus, and withdrawn; the hips of the fœtus soon followed, and delivery was rapidly completed. No further hæmorrhage took place, and the patient recovered well, with the exception of an attack of phlegmasia dolens, which yielded to appropriate treatment.

On the 13th of May, 1845, when in the sixth month of pregnancy, hæmorrhage to some extent took place, attended with shivering and sickness; a recurrence of the same symptoms at uncertain intervals, until the completion of the seventh month, with, on one or two occasions, great discharge of florid blood.

July 1st. Labour pains came on, with much hæmorrhage; the placenta was found separated to a considerable extent, and protruding at the os externum. The finger was introduced, as on the former occasion, and the connexion of the placenta with the uterus completely destroyed, when all hazard of further discharge was effectually prevented. The head was found at the brim of the pelvis, accompanied by a hand of the fœtus. Uterine action ceased for a while, but soon returned with considerable power; at first the hand showed a tendency to advance and the head to recede, but by carefully pressing the hand back during the pain, the head soon descended so as to occupy the cavity of the pelvis. It was, however, accompanied by the hand, which could not be entirely pushed back, although, by the efforts made to prevent its advance, the shoulder was probably prevented from occupying the brim of the pelvis insteadof the head.

The pains increased in force, and in about an hour after my arrival the delivery was completed. The ovum came away entire, except that the membranes had been lacerated at one side, and the liquor amnii discharged. The preparation shows the placenta in advance of the head; the arm retains the position it occupied during birth, by the head of the fœtus; the funis is twisted round the chest and neck, and the lower extremeties remain enveloped in the membranes.

July 3rd. Patient going on well; no inordinate discharge followed delivery.

29th. Recovered well: in her ordinary health.

Provincial Medical and Surgical Journal, Sept. 10, 1845, *p.* 567.

[Mr. Parker, Surgeon to the Bridgewater Infirmary, communicates a case where the placenta was expelled previously to the child, and was found on the bed The patient had had hæmorrhage a fortnight before, which ceased suddenly; recurred again, but stopped after a short time on the occurrence of active pains.]

On making an examination, to my astonishment I found the placenta lying on the bed, completely expelled from the vagina, and about two inches of the umbilical cord also protruded with it; the arm of a full-grown fœtus was also presenting and protruding from the vagina as far as it could. There was not the slightest hemorrhage; there were regular pains at short intervals; the patient complained of being faint and weak; she had a small quick pulse. After giving her a full opiate, in a little warm brandy and water, I slowly and cautiously introduced my hand, got one foot, and with little comparative difficulty turned; the delivery was soon effected,

there was not the slightest hæmorrhage, and the patient recovered without one unfavourable symptom.

Provincial Medical and Surgical Journal, Sept. 24, 1845, *p.* 591.

175.—ON THE MODE IN WHICH PLACENTAL PRESENTATION IS PRODUCED.

By Richard Doherty, Esq., M.D., &c.

[The mode in which, in Dr. Doherty's opinion, placental presentation is produced, is as follows.]

Such cases are divisible into two classes, those in which merely a lobule of the placenta overlaps the os uteri, and those wherein the placental mass is wholly engrafted on the cervix. In their origin, I apprehend, they are quite distinct. The former arises from the placenta when originally attached in a natural situation, as denoted by the insertion of the cord, growing irregularly, and thus extending a portion of its margin into the cervical region of the uterus, in which case it gives rise to, for the most part, merely a partial placental presentation; and this is the more usual form of the anomaly. But the occurrence of full placental presentation, where that substance springs from the whole disk of the mouth of the womb, is, I believe, referrible to a deficiency in the decidua, which should naturally extend across the orifice of the Fallopian tube, and the absence consequently of the support, which ordinarily it is thus enabled to give to the ovum, as it enters the womb. I think it must be evident to every reflecting mind, that a wise provision is designedly made by nature for the purpose of preventing the ovum from falling towards the os, and there taking up its residence. The reflexa, a membrane which, be it remembered, does not exist in quadrupeds, in whom no such danger could arise, must have the effect of maintaining it at the upper part of the uterus. But let the decidua be imperfect, or the ovum descend into its cavity before that membrane has acquired sufficient consistence and tenacity to resist its weight, the ovum must, I conceive, make its way to the neck of the womb, and give rise to an implantation of the placenta there. And this opinion is not a mere baseless supposition, unsupported by evidence, but is drawn from certain cases recorded for a totally different purpose. Thus, in the instance related by Lee, of a young woman who poisoned herself in the second month of pregnancy, wherein he found (as, in his opinion, is invariably the case) the Fallopian tubes pervious, the ovum had taken up its position at the os, and was forming its placenta there;* and Sir Everard Home† details the case of a female, pregnant eight days (a period far shorter than that which the product from the ovary usually takes to arrive at the womb), in whom a small ovum was detected near the cervix uteri, in the midst of long filaments of coagulable

* Medico-Chirurgical Transactions, vol. xvii. 493. London, 1832.

† Philosophical Transactions, 1817, Part ii. p. 252.

lymph; in her the os was completely closed, but the orifices of the superior angles of the uterus were uncovered by decidua.

As to the mode in which hæmorrhage is produced, when the placenta occupies the lower segment of the womb, an ingenious theory has been lately broached by M. Gendrin, in his Philosophical Treatise on Practical Medicine, a work characterized, in general, by sound and comprehensive doctrines, based on the experience afforded by the wards of La Pitié. The view which he has announced is, that the placenta grows, not by extending its edges, but by increasing its centre, according as room is made for it by the enlargement of the womb, its margin never making any advance; and that the rupture of vessels, which produces the flooding, is caused, in placental presentations, not by the expansion of the lower segment of the uterus exceeding the accretion of the placenta, and so tearing up their attachments, as is now believed, but, on the contrary, by the neck of the womb being unable to make progress equal to the rapid development, during the latter months of pregnancy, of the organ implanted on it; he believes, in fact, that the bleeding in placental cases is from ruptures in, or exudations from the placenta, and not from denudations of the uterine sinuses.* But, in the first place, that the hæmorrhage issues from the womb, and not from the placenta, is evinced by the child being sometimes born alive in these instances, and by a case given by Ingleby, in which the practitioner cut away a part of the placenta, which obstructed the mouth of the womb, and yet no discharge of blood escaped from the cut surface.† Secondly, if the growth of the placenta were, by addition to its centre alone, and not by extension of its edges, it should, I conceive, always maintain a strictly circular form, and yet we know how frequently it presents inequalities and irregularities in its circumference, "the edges of it terminating in a broken manner, forming somewhat like the lines of a very irregular island on a map."‡ And thirdly, the supposition that the hæmorrhage is caused by the placenta outgrowing the uterus, is at variance with the fact, that in some cases of *full* placental presentation, bleeeding does not exist during the development of these organs, but arises, for the first time, only when labour sets in. The possibility of an occurrence so contrary to general experience, has not escaped the notice of Dr. Rigby, Jun. In giving an example, in which the placenta was centrically placed, and yet there was no gush of blood, until the patient had gone her full time, he asks, "are not those hæmorrhages from

* Traité Phil. de Méd. Pratique, par A. N Gendrin, D. M., tom second, p. 222. Paris, 1839. Hamilton entertained the same ideas as to the source of the blood. "The author," he observes, "from the earliest period of his professional life, has been anxious to shew that the hæmorrhage in these cases proceeds more from the separated portion of the placenta, than from ruptured uterine vessels."—*Op. Cit.* p. 226, Part ii.

† *Lancet*, 1st vol. for 1839—40, p 943.

‡ An Essay on Uterine Hæmorrhage, by Edward Rigby, p. 140. Norwich, 1822.

placenta prævia, which make their first appearance in the seventh and eighth months of pregnancy, generally connected with a partial attachment of the placenta to the os uteri; and, on the other hand, when it is centrically attached, does not the patient usually go to the full term of gestation before any hæmorrhage takes place?" I am now in a position to answer these questions. I have been engaged in examining the records of cases of this description, and although in many the distinction is not sufficiently drawn between a partial and full presentation, nor the period of the first occurrence of hæmorrhage defined, to make them available for our present purpose, I have collected a sufficient number, of which the details are accurately given, to prove, that where there is merely a bit of the placenta overhanging the os, the woman scarcely ever goes beyond the seventh or eighth month without an alarming discharge of blood; while, on the other hand, although with a full implantation, hæmorrhage, in the greater number of instances, bursts forth at intervals during the latter months, it is not a very unusual circumstance to find such patients proceed without any sanguineous loss till their term is completed; and I should explain the difference in this way: when the placenta springs from the cervix, or, as in one patient, although originally commenced on one of the walls of the uterus, as indicated by the root of the cord, it enlarges to such a magnitude as to cover completely the neck also, its growth has been sufficiently concentrated or extensive to keep pace with the circular expansion then progressing in the inferior chamber of the womb; whereas, when the substance, being at first elsewhere affixed, does not exceed its usual proportions, but is merely developed so irregularly as to advance a portion of its margin over that part, its growth is expended in other directions, and it becomes unable to adjust itself to the daily increasing size of the region into which it has, as it were, strayed.

[These views, both of M. Gendrin and Dr. Doherty, are particularly interesting at the present moment, when the practice, of Drs. Radford and Simpson, respecting placental presentations, is occupying the attention of practitioners.—See *Retrospect*, Vol. XI., Article 125.]

Dublin Journal of Medical Science, July, 1845, *p.* 332.

17.—*On the Structure of the Human Placenta.* By JOHN GOODSIR, Esq., F.R.S.E., &c. [The following opinion of Mr. Goodsir on this subject is important at the present time, when we are so interested in these cases of placental presentation.]

According to Mr. J. Goodsir, the walls of the tuft or villi of the placenta are composed of the following textures. 1st, A fine transparent membrane, continuous with the internal membrane of the vascular system of the mother, described by Dr. J. Reid. 2d, A layer of cells, the external cells of the villi, described by Mr. Dalrymple. Mr. J. Goodsir believes that those cells adhere to the outer surface of a very fine membrane, and if this be the case, this

second layer of the villi is a germinal membrane, and performs the functions of such membranes in other parts of the organism. This second layer he believes to be continuous with, and to form a part of the decidua. 3d. A membrane even finer and more transparent than the external, immediately bounding the blood-vessels, and which he names, *the internal membrane of the villus.* 4th, A layer of cells, *the internal cells of the villus.* 5th, the blood-vessels of the tufts. The two first form the maternal portion, the two last, the fœtal portion of the placenta. He concurs in the description given by the Hunters, and some later anatomists, of the mode in which the vessels of the mother pass through the decidua. He has also satisfied himself that Weber and Dr. Sharpey are right in their description of the conversion of the mucous membrane of the uterus into the decidua vera. He supposes, however, that the decidua reflexa is formed out of the cells separated from the germinal membrane of the mucous follicles of the decidua vera. Those cells he believes to resemble that kind of secretion already described, in which the cells undergo their full developments after their separation from the secretory surface. He concludes from the anatomical constitution of the villi, "that the function of the external cells of the placental villi is to separate from the blood of the mother, the matter destined for the blood of the fœtus. They are, therefore, secreting cells, and are the remains of the secreting mucous membrane of the uterus." "The function of the internal cells of the placental villi, is to absorb through the internal membrane the matter secreted by the agency of the external cells of the villi. The external cells of the placental villi perform during intra-uterine existence, a function for which is substituted in extra-uterine life, the digestive action of the gastro-intestinal mucous membrane. The internal cells of the placental villi perform during intra-uterine existence a function, for which is substituted in extra-uterine life, the action of the absorbing chyle cells of the intestinal villi."

Monthly Journal of Medical Science, June, 1845, *p.* 443.

177.—ILLUSTRATIONS OF ULCERATION OF THE CERVIX UTERI.

By J. H. Bennet, Esq., M.D., &c.

[Dr. Bennet *premises* that great objections have been taken in this country to his Treatise on Inflammation, &c. of the Cervix Uteri, from the supposition that the disease described, though it may be met with frequently in Paris, where he studied it, is unknown in Britain. Unknown it undoubtedly is, but we firmly believe that when the pathology of uterine diseases is better understood, its existence will be recognised, and it will be found to the full as common as stated by Dr. Bennet, in his valuable work upon it. For it is dependent upon anatomical and physiological peculiarities, and must, therefore, *cæteris paribus*, be equally frequent in England as on the continent.

Dr. B. publishes some cases of the disease which he has lately met with, and which serve admirably to illustrate its pathology and treatment. The first was in a married woman, of 28; married at 20, but had never conceived. Shortly after marriage she was attacked with lumbar and hypogastric pains, leucorrhœa, dysmenorrhœa, &c., followed by general weakness. As she had always been delicate, steel and quinine, &c., were prescribed, with change of air, for which various inland and seaside watering places were tried, and afterwards the continent. The leucorrhœa persisted, though it was better at times, according to the state of the general health.]

Suspecting, from the above account, chronic ulceration of the cervix uteri, I explained the necessity of further examination; on practising the toucher, I found the cervix rather voluminous, prominent, resistant, but not offering the deep hardness of chronic induration; the lips of the os were open, so as to admit the extremity of the index, soft and velvety, and there was slight superficial induration; on introducing the speculum, the internal surface of the labiæ nymphæ and vagina was found deeply congested, of an intense blood-red colour, and covered with an abundant mucoso-purulent discharge. The redness of the more external genital organs was very much more vivid than is usually the case, and seemed to be as much the result of extreme congestion as of inflammation; there was little or no increase of the natural heat or sensib lity. The cervix was voluminous, especially the anterior lip, scarcely entering a middle sized speculum, slightly retroverted, and presented an ulceration of the size of a shilling, penetrating into the cavity of the os, and covered with fungous bleeding granulations. The surrounding mucous membrane was of a blood-red hue, varicose and spongy; there was a copious mucoso-purulent discharge covering the cervix, and occupying the vaginal cul de sac, inferiorly, which had to be wiped away before the cervix could be examined. The general symptoms enumerated above were all present; in addition, the complexion was rather sallow, the appetite bad, and the bowels inactive. The patient complained of weakness, irritability, and lowness of spirits; and stated that menstruation was often painful and scanty, and frequently returned two or three times in the month; this, no doubt, was merely slight hæmorrhage from the ulcerated surface, which she mistook for the menstrual flux. After fatigue she had a slight sensation of pelvic heaviness. I cauterized the ulcerated cervix with the solid nitrate of silver, which I also pushed up the os uteri; injections, with a solution of sulphate of zinc (one drachm to a pint of water), were ordered three times a day, and rest, in the horizontal position, on a sofa, enjoined. Internally, I prescribed half a drachm of the sesqui-oxide of iron, to be taken every day, in two doses, and a five grain pill of aloes cum myrrha every other night, at bed-time.

May 30th.—Much the same; the colouration of the cervix

and vagina perhaps a little less livid, but the mucous membrane still humid, varicose, and the ulceration covered with fungous granulations. She had had what she called a show during the day which followed the cauterization. The application of caustics to an ulcerated surface, I may remark, is often followed by the oozing of a little blood. She thought the pills did not agree with her: they were therefore suspended. As it was evident that the nitrate of silver was not a sufficiently powerful agent to modify the irritability of the ulceration, I cauterized it deeply with the acid nitrate of mercury; little or no pain was experienced.

June 4.—The eschar had not completely fallen; the leucorrhœa had diminished in quantity; the lumbar pains were less intense; the mucous membrane of the cervix had lost its varicose congested appearance; and where the eschar had fallen, were seen healthy, florid granulations; the latter surfaces were touched with the nitrate of silver. Same treatment; viz., rest; astringent injections; iron, internally; and, in addition, tepid, or nearly cold, hip-baths, for fifteen minutes, night and morning; diet to be light and nourishing. Not feeling any pain, and the leucorrhea being diminished, she thought she was cured; and I had some trouble to induce her to continue the treatment.

9th.—Nymphæ and vagina no longer livid and congested, but of a natural rosy hue; mucoso-purulent secretion much diminished; the cervix much less in size; it enters the speculum easily; ulcerated surfaces covered with small healthy granulations; has been menstruating during the week; flux perfectly easy, and more abundant than usual; no pains anywhere; general health much improved; ulceration again cauterized with the nitrate of mercury; injections with the acetate of lead, instead of the sulphate of zinc; iron internally; an opening powder of sulphate of magnesia ʒ ii., carbonate of magnesia ʒ ss., to be taken once or twice a week.

July 3rd.—Has been cauterized every week, either with the nitrate of mercury or lunar caustic, and with gradual improvement; to-day the ulceration is all but healed; the congestion of the cervix has entirely disappeared, and it enters the smallest circular speculum; the mucous membrane is of a natural hue; the leucorrhœal secretion is but slight, and, instead of being nearly entirely purulent, as at first, is, in a great measure, mucous (transparent and viscid); she experiences no pain whatever; menstruation has just taken place, easily and abundantly; the ulceration was again cauterized with the acid, and she was allowed to go into the country for a fortnight, being recommended to persevere with the original injections, hip-baths, occasional laxatives, &c.

On the 22nd, she returned to town to be examined. She stated that a week after she had left, all leucorrhœal discharge had ceased; the external and internal mucous surfaces were found healthy, and the cervix perfectly cicatrized, of a white rosy hue; the os free and open; she felt perfectly well; had no pains in any part of the body,

and had gained strength; the palpitations and dyspeptic symptoms had disappeared; the tongue was clean; the appetite good; and the bowels acted freely. I told her to continue cold-water injections for a month, but to suspend all other treatment, as she might consider herself cured. I also recommended sea-bathing, exercise, and a generous diet.

Remarks.—This case is one of the most interesting that I have met with, and tends strongly to corroborate my views with regard to the importance of distinguishing inflammation of the cervix in women who have not conceived from the same affection in women who have. The disease with Mrs. A—— was evidently the result of marriage, and not having been recognised or treated, persisted for seven years, rendering her life perfectly miserable The palpitations, cardialgia, pains in the loins, and all the other symptoms (including the purulent vaginal discharge) were considered merely indications of general debility; a state of the economy I may remark, which seldom exists without some tangible cause in the shape of a lesion of the solids or of the fluids. As might have been anticipated, the tonic medication pursued by her medical attendants was vain, as long as the local inflammation was unrecognised and consequently allowed to perpetuate itself. A very peculiar feature in this case is the extent of the congestion and sub-acute inflammation of the mucous surface of the entire uterine system, from the labiæ to the cervix. The uterus itself was, no doubt, in the same state of morbid congestion, as evidenced by the habitual dysmenorrhœa. It will be remarked that the treatment pursued, which was very quickly successful, restoring the patient to health in the course of a few weeks, was nearly entirely local. The irritability of the unhealthy ulcerated cervix having been subdued by the action of energetic, but superficial cauterization, the congestion disappeared, menstruation became easy, and the leucorrheal discharge diminished, ceasing entirely when cicatrization had taken place. In the meantime, the depressing and wasting influence of a serious local disease being substracted, the general health rallied. The recovery of strength and spirits, the nearly total disappearance of all dyspeptic and nervous symptoms in so short a time, can only be accounted for on this ground; the iron and slight laxatives which were given can only be considered adjuvants, and were, in reality, merely administered as such. I am, indeed, firmly convinced that my patient would have recovered her health nearly as rapidly had the local treatment and general hygienic measures alone been resorted to. In this case, although the disease lasted so many years, the uterus being in the state in which it is previous to conception, there was no deep seated hypertrophy, or induration of the cervix, and consequently no prolapsus, or retroversion. The nearly total absence of spinal nerves in the cervix, and their paucity in the body of the uterus, accounts, as I have repeatedly stated, in the most satisfactory manner for the slightness of the local pains, and for the obscurity of the symptoms in general.

The above case is a striking illustration of the pathological fact, which I cannot too often repeat, that a serious and extensive inflammatory ulceration may exist for many years in the interior of the uterine system, keeping up a continual drain on the economy, constituting a morbid centre from which irradiate numerous sympathetic affections of the most distressing nature, and yet only indicating its presence by symptoms of but little importance in the eyes of the great mass of practitioners.

In such cases, it is clearly the duty of the medical attendant to adopt those means of diagnosis and treatment, which will alone enable him to recognise, and to cure, the disease. We can be no more called upon, by the strictest sense of morality and propriety, to leave a miserable woman, affected with such a malady, without relief, than to refuse to operate on the female for lithotomy, polypus, fistula, or for any other disease affecting the genito-urinary system.

[The patient in the next case was only 20 years of age, but had had at the full time, a child. As she had been sickly during pregnancy, the child was put out to be suckled by a wet nurse. Though no serious accident followed, she did not regain her strength, and a leucorrhœal discharge, with slight hypogastric pains, followed. This increased, and streaks of blood occasionally appeared in it; she thus became alarmed, and consulted Dr. Bennett, who says]

On exercising the toucher, I found the surface of the cervix soft and velvety; there was a slight general induration of the cervix, but no very marked hypertrophy; slight retroversion. The speculum shewed an ulceration nearly as large as a half-crown, occupying both lips and covered with florid bleeding granulations. The anterior lip was much the larger one of the two, there was an abundant mucoso-purulent discharge in the neighbourhood, and the upper part of the vagina was inflamed and congested. The lower region of the vagina, and the vulva, presented nearly the usual healthy colouration; the tongue was rather loaded; the appetite bad; the action of the bowels irregular; palpitations, general languor, and disinclination for any exertion. These symptoms had latterly become much more marked, especially after fatigue, when she experienced a slight bearing-down sensation; there was no pain, whatever, in congress. The treatment I adopted consisted in cauterization, with the nitrate of silver, every five or six days; injections with the sulphate of alum; a saline laxative, once or twice a week; and rest, in the horizontal position, as much as possible.

May 6th. For three days after the cauterization, there was no leucorrhœal discharge. It then returned, but diminished in quantity; no pain; ulceration not diminished in size, but granulations smaller and do not bleed so easily. The congestion of the neighbouring parts is evidently diminished. Same treatment; cauterization every fifth day; in addition, cold water enemata and tepid hip-baths.

15th. Finding the cervix still congested and red, the granulations florid, and the ulceration not much diminished in size, I aban-

doned the nitrate of silver for the acid nitrate of mercury, with which I cauterized the ulcerated surface freely. Same treatment; and in addition half a drachm of sesqui-oxide of iron daily, the general state not being much improved. Two days after the cauterization the menstrua came on, a few days earlier than usual, and with much greater freedom and ease than on previous occasions.

June 15th. On the falling of the eschar, produced by the cauterization of the 15th of May, the cervix was found much diminished, so much so as to enter the speculum very easily; and the surrounding parts were very much less congested. Cicatrization at once commenced, and progressed rapidly. The same general and local treatment was continued; the ulceration being cauterized once a week, more or less freely, according to circumstances, and generally with the nitrate of mercury.—To day it is nearly healed; the inferior lip is indeed completely so, there being merely a little redness about it; the size of the cervix is nearly natural; there is not a trace of induration. The leucorrhœal discharge has nearly ceased; there are no pains anywhere; the general health is very much improved; the lips and cheeks, previously pale, have become rosy; the palpitations and cardialgia have disappeared; the tongue is clean, and the appetite good. I therefore suspended the iron, the laxative medicine, baths, astringent injections, &c.—merely touching the small remaining ulceration, occasionally, with the nitrate of silver; enjoining vaginal injections with cold water; a generous diet, with a little good wine, and moderate exercise. As there was only a very small ulcerated spot on the anterior lip, I subsequently used in my examinations the smallest circular speculum, which, the cervix being slightly retroverted, did not entirely uncover the inferior lip.

25th. The ulceration is completely healed on the anterior lip, and presents a firm white cicatrix. No discharge, except a little *transparent mucus*; general health very good in every respect. I told my patient not to live with her husband for a month, and to use once or twice in the twenty-four hours, during that period, cold water vaginal injections.

A month afterwards, the lady called on me and stated that the vaginal discharge had returned, and had, as before, been streaked with blood after congress. On examining with the small circular speculum, which I had latterly used in her case, I found the anterior lip perfectly cicatrized, as I had left it; but on using Ricord's bivalve speculum, so as very freely to expose the under lip, I perceived at once that it had reulcerated, and presented a granulating surface of the size of a sixpence. On closely questioning my patient, I ascertained that her husband had reassumed his matrimonial rights as soon as I had ceased to attend, which explained the return of the ulceration on a spot that was still very likely the seat of erythematous redness, when I last saw her, although I did not then ascertain the fact The treatment formerly pursued was resumed, and in the course of a few weeks the cure became really perfect. I did not this time pronounce my patient well until I had ascertained

by a careful and satisfactory examination, that all traces of redness had disappeared.

Remarks.—The above case is a very interesting illustration of a considerable proportion of the cases that are observed in practice. It also well illustrates the views which I have brought forward to account for the formation of ulcerations of the cervix after parturition. The patient had been in very indifferent health during her pregnancy, and gave birth to a sickly child, which died, in the course of the year, of convulsions. Being in this bad state of health, it is probable, that some abrasion or lacerations of the mucous membrane of the cavity of the cervix, occurring during parturition, did not heal, as usual, but ulcerated, perhaps, under the *immediate* influence of some local cause. The ulceration having been formed would be perpetuated, owing to the anatomical and physiological peculiarities which I have described at length, and would, subsequently, contribute to undermine the already indifferent health of the patient. The sympathies which unite the uterus to the rest of the economy, are sufficiently powerful to account for a suppurating sore, situated on the cervix, destroying the health in the course of time, whilst the nearly total absence of spinal nerves in the cervix uteri, explains the absence, at least the latent form, of the ordinary symptoms of inflammation and ulceration. Had this lady applied to one unacquainted with the very important facts which I am endeavouring to propagate among my fellow-practitioners, she would most certainly, have been treated merely by tonics, and the leucorrhœal discharge would have been considered as merely the *result* of weakness, not of a deep-seated, organic lesion, the true cause of all the mischief. In this case, indeed, nearly the only *local* symptoms were the discharge, and the occasional presence of a few drops of blood; for the hypogastric and lumbar pains, and the bearing-down sensation, which become prominent symptoms when there is hypertrophy and prolapsus, were not sufficiently marked to even attract the attention of the patient, until questioned thereon. The inflammatory hypertrophy being so inconsiderable, and the parietes of the vagina possessing great contractile tonicity, the cervix was supported, also, in its normal position, which accounts for the latter fact.

The nitrate of silver was evidently not a sufficiently active caustic to destroy the irritability of the ulcer. This I have generally found to be the case when the granulating surface is covered with fungous, very vascular granulations; or when there is deep-seated inflammation. The moisture of the granulations absorbs the caustic, and renders its action too superficial in the former case; and in the latter it does not appear to have sufficient power to modify the general inflammation, most probably also from its very superficial action; from the time that a stronger caustic was used, the case rapidly progressed towards a cure. When I ceased my attendance, I omitted to examine the inferior lip, as I ought to have done, for although healed it was still red when I last saw it, ten days previous. Had the patient followed my directions, however, I do not think the red surface would have again ulcerated, as it subsequently did; owing,

most likely, to the imprudence of the husband. This untoward circumstance proves, however, how necessary it is fully and perfectly to examine every region of the cervix. I was induced, in this instance to abridge the final examination, owing to a little unusual exhibition of impatience on the part of the patient. I now feel certain that the cure will prove permanent.

In the above cases, had the patients remained for years suffering from the malady which I thus discovered and treated, who can say that it would not have terminated in cancerous disease?

Lancet, Oct. 11, 1845 *p.* 391.

[In a third case recorded, also in a married female, the history of the symptoms was, that four days after confinement she got up and walked about the room. Severe uterine pains immediately occurred, and the lochial discharge ceased. On its partial return, a few days after, the severity of the pains became mitigated; they returned, however, with greater violence, and the discharge again became very abundant, and marked with blood. This, with the increasingly bad state of her general health, alarmed her, and induced her to apply to Dr. Bennet, who states:—]

I found Mrs. C—— pale, delicate looking, and offering the following symptoms:—General weakness and languor; tongue rather loaded; no appetite; bowels confined; slight cephalalgia; abdomen rather swollen; slight pain in the hypogastic and lumbar regions, extending over the entire lower portion of the abdomen; sensation of pelvic weight and bearing down on walking; sanguineo-purulent discharge from the vagina. There were no febrile symptoms present. Pressure above the pubis was not painful, nor did the uterus appear unusually large. I at once concluded that the abnormal symptoms observed were most probably owing to a latent inflammatory affection of the cervix uteri. On practising the toucher, I found the os uteri open, sufficiently so to admit the extremity of the index; the cervix itself was rather voluminous and resistant, and presented, especially around the os, a well marked, velvety sensation. There was, evidently, inflammation and ulceration of the organ.—*Speculum*: Labiæ rather congested, as also the vagina; both present on their surface a sanguineo-purulent secretion; considerable congestion of the vagina, especially in the superior half; cervix so voluminous as scarcely to enter the largest circular speculum, of a livid red hue, rather resistant throughout its tissue; on its surface appears an ulceration nearly the size of a half-crown, covered with florid bleeding granulations, penetrating into the open os (from which flowed transparent mucus), and extending around it. The perfect transparency of the mucus issuing from the cavity of the os proved that the lining membrane of the uterine cavity was not inflamed, and that the ulceration of the cervix did not extend deeply into the neck; whilst the absence of a pain on pressure, and the small size of the uterus, as ascertained by applying the left hand on the abdomen, and raising the organ by means of the index placed

underneath the cervix, proved that the body of the uterus was not diseased, the disease being evidently limited to the cervix.—*Treatment:* Cauterization of the entire ulcerated surface, including the cavity of the os, with nitrate of mercury; astringent aluminous injections; tepid hip-baths; six grains of compound rhubarb pill, with two of the blue pill, every other night; rest in the horizontal position; light diet.

25th Sept.,— Hypogastic and lumbar pains much less intense. Discharge, no longer sanguinolent since the fourth day, when a "skin" (the eschar) came, merely purulent, and pretty nearly as abundant as before. General state much the same; the bowels have been copiously moved. No appreciable difference by the toucher; vagina and cervix very much less congested and irritable; ulceration much less angry-looking; it presents small healthy granulations, which do not bleed easily on being touched, as before, and are covered with an abundant, healthy, purulent discharge. The irritability of the ulcerated sore has evidently been destroyed by the measures adopted, a fact which is proved by the diminution in the pains, and by the local state. Same treatment.

[She progressed well. On the 20th, he reports that she had menstruated a little before, for the first time since her confinement; the flow was abundant, easy, and unaccompanied by pain, and the case might be considered cured.

Dr. Bennet remarks that such cases as the above first led him, in opposition to the opinion of French pathologists, to believe that when this disease occurs in married women, it is almost always produced by parturition. In this case, there was no leucorrhœa previous to delivery; the supposition that inflammation, or ulceration of the cervix uteri existed prior to that event is, therefore, entirely gratuitous. But]

Four days after delivery, she imprudently gets out of bed, and walks about. The lochial discharge is nearly arrested, and she is seized with severe uterine pains, which at first diminish, and then return. and never leave her again, gradually becoming more and more intense; their presence clearly indicating some deep-seated source of irritation. The lochial discharge, at first sanguinolent, becomes merely purulent for a short time, and then *again assumes a sanguinolent character.* All this is significant enough. Under the influence of the slight uterine irritation which was set up, owing to imprudence a few days after confinement, in a person already in a bad general state of health, some abrasions or lacerations of the mucous lining of the cavity of the cervix ulcerated, and the ulceration gradually extending on the mucous surface, and the inflammation gaining the deeper tissues, matters arrived at the state in which they were when I examined the patient. It is remarkable how soon the inflammatory irritability of the sore, and of the surrounding tissues, was modified by the energetic yet superficial cauterization to which I resorted, and how rapidly the disease progressed to a cure, when once this result had been obtained; the

general inflammatory induration of the organ melting gradually as it were. The case is, certainly, a very instructive one. How much suffering was here saved, by early examination and treatment. *Lancet, Oct. 25, 1845, p. 447.*

178.—REMARKS ON VARIOUS POINTS IN PRACTICAL MIDWIFERY.

By E. W. Murphy, Esq., A.M., M.D., &c.

On the Action of the Muscular Fibres of the Uterus. [The action of the *external muscular layer* of the uterus, Dr. Murphy states, is gradually to draw the uterus down, and to fix the fundus. They are also useful, when the dilatation of the os commences, in supporting the fundus, and thus enable the internal fibres to contract more efficiently.

The action of the internal set, he thinks, has not hitherto been rightly explained. For a correct view of their action they should be considered separately, as first, the effect produced by the contractions of the different sets of fibres, and secondly, the order in which these contractions takes place.]

When the fibres surrounding the Fallopian tubes contract together, the fundus uteri is equally diminished on all sides, and their combined effect, conveyed through the medium of the liquor amnii, is precisely the same on the mouth of the uterus as if the fibres passed down vertically and acted directly upon it. In order to render this intelligible, I shall have to ask your patient attention for a few moments.

Let us suppose a line to pass from the opening of the Fallopian tube of one side of the uterus to the opposite, in such a manner as to represent the direction of the force of the fibres surrounding it. This line would pass obliquely downwards to the opposite side. If, therefore, these fibres alone acted, the fundus on that side would be diminished in its size, and the contents of the uterus pressed toward the lower section of the opposite side, but not against the os uteri. If, further, two such lines passing from the orifice of each Fallopian tube represented the force of each set of these concentric fibres, the intersection of these lines would be the common point where these forces would meet, and, to a certain extent, be opposed. The combined force must, therefore, take an intermediate direction equi-distant from both lines, which would be represented by a line passing in the axis of the uterus, and through the os uteri. It follows, therefore, that when the fundus of the uterus contracts equally, the resulting force must be communicated to the os uteri, as perfectly as if the fibres passed vertically from the fundus to the mouth of the uterus. When *the circular fibres of the body and cervix contrat*, their tendency is to render the uterus more and more cylindrical, according to the degree of their contraction, at the same time that they close in the cervix. Again, if the uterus were emptied of its contents, the simultaneous action of all these different

sets of fibres would be, to draw the parietes equally towards the centre of the cavity. But when the uterus is gravid, and makes an effort to expel the fœtus, they cannot all contract in this manner.

The fundal muscles are those which chiefly effect the dilatation of the os uteri and the expulsion of the child, the fibres of the body and the cervix remaining comparatively passive. It has already been explained to you, that their united action is in the direction of the os uteri; but there is still a necessity for a means by which the result of that action should be perfectly conveyed to it. This is accomplished by the fluid enclosed within the amnion, which acts with a distending power upon the os uteri exactly equal to the combined force of these muscles. The muscular bands, described by Sir C. Bell, must also have the effect of expanding the os uteri by drawing it upwards. The circular fibres of the body and cervix, like antagonist muscles, resist the efforts of the fundus to distend them, and the force of their resistance is also communicated to the contained fluid. This force is therefore, as it were, reflected upon the os uteri, so that the whole uterus might be said to act as one muscle in dilating the mouth. The os uteri has been generally considered to possess circular fibres, its action to resemble, in some degree, the sphincter muscles in other situations, and its dilatation to be the effect of their relaxation. The existence of these circular fibres at the os uteri has never been proved. Hunter could not demonstrate them; Sir C. Bell could not trace them out. If a sphincter muscle exist in that situation, why should not its fibres be as distinct and as easily made out as the sphincters of other hollow muscular viscera? Neither does the manner in which the os uteri dilates support this assertion. Its expansion is very gradual, it yields slowly to the power described, and does not resemble the comparatively sudden relaxation of a sphincter muscle. Were it similar, rapid labours (at least so far as the dilatation of the os uteri is concerned) would be the rule, not the exception. It would be incorrect, then, to attribute the resistance offered by the os uteri to muscular contraction. It seems more probable, that the firm, highly-condensed tissue that forms the cervix of the virgin uterus, still retains, in its altered state, many of its original characters; that this tissue, although more unfolded, is still sufficiently compact and elastic to offer a great degree of resistance, and that its dilatation is effected by the incessantly repeated efforts of the uterus slowly overcoming and expanding it. Such a view seems to be fully supported by the observation of labour in its first stage, where we can perceive the os uteri first becoming thinner, and then progressively (not suddenly) opening. It has been stated that the sudden relaxation of the mouth of the uterus, after a continued retraction, can only be explained on the assumption of its muscularity. The same effect, however, may be observed in other tissues besides muscle; the perinæum, for instance, often resists, for a long time, the action of the uterus, and then yields suddenly to its full extent, so that the head is most unexpectedly delivered, and yet the distended portion of the perinæum is not muscular. Besides, these sudden dilatations

are only exceptions to the general rule. In ordinary cases, dilatation occupies a certain period of labour, (often a very long one), and the mouth of the uterus yields very gradually to the power employed.

Lancet, May 24, 1845, *p.* 576

On Supporting the Perineum. [When the position of the head in a case of natural labour, and its relation to the pelvis have been ascertained, the next object of attention is the perineum. Respecting the mode of supporting this, Dr. M. says,]

The mode of doing so, which I have been in the habit of adopting, is somewhat different from that directed by the more popular writers on midwifery. Ramsbotham and Rigby both employ the left hand to press against the perinæum, and the right is kept in reserve to make any necessary correction. Churchill and others adopt the same plan. Dr. Rigby admits that "it is awkward at first, because it requires the hand to be considerably twisted, and makes the wrist ache a good deal."

The left hand is twisted, in order that the fingers may be directed forwards toward the perinæum. Dr. Ramsbotham directs the palm of the left hand to be pressed against the perinæum, with the fingers, I presume, the other way. He does not state so, but I draw the inference from his description; and if correct, it is liable to the objection which Dr. Rigby is fully aware of and endeavours to avoid—that is, that the part of the hand which has the least acute sense of touch is applied to the margin of the perinæum, and you cannot so readily perceive its degree of distention as when the fingers lie close to it. The plan which I have found the most useful and convenient to adopt at this period of the labour, is the following:—To sit behind the patient as she lies upon her left side, the back of the chair being towards the head of the bed, and while the head of the child is passing through the pelvic cavity, to press moderately with the left hand over the hip of the patient Counter-pressure in this way employed is generally grateful to her, and seems to give her some relief; it assists also in keeping the pelvis fixed when the head is passing the perinæum. the most important part of this process. Having the left hand so employed, the right can be used to support the perinæum A single fold of a fine napkin should be placed along the edge of the perinæum, and the right hand so applied that the fold of skin between the forefinger and thumb should correspond to this, the forefinger and thumb passing on either side of the vulva, and the palm of the hand, resting against a thicker fold of the napkin, applied to the posterior part of the perinæum. By this means you have full power to make any counter-pressure with the palm of the hand which may be necessary, and the fingers being quite close to the edge of the perinæum and vulva, you can easily trace the margin of the perinæum, and feel the head, if necessary. Thus one hand fulfils the office generally assigned to two, and enables you to grasp with the left hand the pelvis,

to prevent the patient moving away too suddenly when severer pains come on. If, the head being expelled, this be no longer necessary, you can employ the same to support the uterus during its contraction in expelling the body of the child, Besides these advantages, it is certainly less fatiguing. The only inconvenience of this method is, that when the funis is coiled round the neck of the child, so as to make it necessary to remove it, or that the delivery of the shoulders should be assisted, the hands must be changed, that the left may support the perinæum and the right make the required correction. But this a temporary disadvantage, and only arises occasionally.

Sometimes the shoulders are very wide, and require to be assisted, which may be done by placing the finger of the right hand within the axilla of the child's arm, on the pubic side, and guarding the perinæum carefully with the left hand. As soon as the shoulders and thorax of the child are delivered, it can respire, and is, so far, beyond danger; no haste should therefore be used in extracting the body and lower limbs; it is preferable to allow the uterus gradually to expel them, and while it is doing so, the left hand should be immediately applied over the fundus, in order to maintain a moderate pressure upon the uterus while it is descending towards the pelvis. This should never be neglected, because it insures a uniform contraction of the uterus, and often the expulsion of the placenta into the vagina. When the child is born, such is the anxiety to remove it as soon as possible from the mother, that the tying of the funis is the immediate occupation of the attendant, while the uterus is generally left to itself. The motives assigned by friends for this haste, is their fear lest some accident may happen to the child; it may get cold, &c. Just as often the real cause is a little natural desire to see and exhibit it; you should not, therefore, suffer yourself to be hurried by these solicitations, nor withdraw your hand from the uterus until you have secured it, either by a temporary bandage, or by the hand of the nurse, if she is sufficiently intelligent to understand your object. The latter plan is more convenient.

When the uterus is thus prevented from again relaxing, you may attend to the funis. The delay is serviceable to the child, because time is allowed for the transition from the placental to the pulmonic circulation, by which the latter is completely established, before placental life altogether ceases. This is of great importance to the health of the child afterwards.

Retention of the Placenta. — It sometimes happens that the placenta is retained after delivery, without any hæmorrhage taking place, and although we shall have again to direct your attention to these retentions, when accompanied by flooding, a few words may not be out of place here, in reference to these very frequent retentions, where no hæmorrhage arises. The causes generally assigned for retained placenta are, either *inertia* of the uterus, *hour-glass contraction*, or *adhesion*; but one quite as frequent, if no more so, is *suspended action* of the uterus. The

former causes are generally attended by hæmorrhage, but with the latter it is very seldom the case. The placenta is retained merely because the uterus is deprived of the necessary irritation to cause its efficient contraction. In such instances, the first contractions of the uterus not being supported, the organ becomes, as it were, accustomed to the presence of the placenta, and it remains imperfectly contracted about it, without any further effort at expulsion. In this way the placenta may remain two—four—six hours in the uterus without being expelled. If the rule which we have laid down be observed, and a steady but moderate pressure be maintained upon the fundus of the uterus during its contraction, this will seldom happen; but if the placenta be not separated then, it is better to wait for some time,—from half an hour to an hour, and again to excite the uterus to contraction. For this purpose the fundus should be brought, as nearly as possible, towards the centre of the pelvis, and grasped firmly with both hands; as soon as it becomes hard, strong pressure upon it is generally sufficient to cause the expulsion of the placenta; if it should not, do not use any violence; rather let the nurse, under your direction, maintain the fundus in the same position, while you pass the fingers, and, if necessary, the hand, into the vagina, in order to stimulate the uterus to contraction. For this purpose the funis should be held firmly in the left hand, and the fingers of the right hand passed along it within the vagina. Sometimes this alone excites contraction; but if not, all the fingers in a conical form, may be introduced within it as far as the os uteri; in doing so you will often find a large portion of the placenta lying at the upper part of the vagina. You may even feel the insertion of the funis, but do not attempt to withdraw it, pass the hand still toward the os uteri, and by irritating it, the portion of the placenta that lies within the cervix is often detached, so that the whole placenta may be removed. If this be not sufficient, withdrawing the hand along the vagina for a short distance will excite contraction; but if both means fail, the fingers must be introduced in the same manner within the os uteri, to dilate it, when the upper part of the placenta may be grasped, and the whole removed. The assistant should press firmly on the fundus uteri while the hand is being withdrawn. In many instances the placenta is found in the upper part of the vagina alone, and can be very easily removed; but no attempt of this kind should be made until the hand has passed above it, so as to have it completely within its grasp. When efforts are made to draw the placenta away by the lower portion, there is always a risk that it may be broken in the attempt, especially if it be caught by the cervix uteri. In one instance which came under our notice, a small portion of the placenta was adherent to the neck of the uterus, and the remainder being dragged away in this manner, gave rise to a hæmorrhage which terminated fatally.

Another cause of retention of the placenta, without hæmorrhage, is irregular contraction of the uterus. This is excited, as we have stated, by drawing the funis frequently, for the purpose of ascer-

taining whether it is separated. Sometimes, also, it is produced by frictions over the anterior wall of the uterus, or rather, over the corresponding portion of the abdomen. By this manipulation the uterus is often pushed over to the iliac fossa, where it remains in a semi-contracted state; or the anterior portion of the uterus is contracted, while the posterior, where the placenta is commonly attached, is relaxed. To remove this irregularity it is necessary, not only to grasp the fundus firmly, as before mentioned, but to pass the fingers over the posterior wall, as low as the abdominal parietes will admit, when, if the irritation excite the relaxed portion, the order of uterine contraction is instantly restored, and the placenta will be immediately expelled. In these cases of retention it is seldom necessary to wait longer than an hour to have it removed, and if the uterus be carefully attended to during its contraction, and firm pressure afterwards used, if necessary, you will very seldom have any occasion to wait so long, or to pass the hand into the uterus to withdraw the placenta.

Lancet, June 14, 1845, *p.* 667.

On Tedious Labours. [Of the causes which render labour tedious, rigidity of the passages is perhaps one of the most annoying. This is frequently dependent upon rigidity of the cervix uteri, caused, it may be, by gradual escape of the liquor amnii, or by accidental pressure against the pelvis by the head of the child. Cases have occurred where it has separated in a ring, and come away with the head, from being tightly jammed in the pelvis. The inflammation on which this depends must be combated as soon as it appears, by local depletion, and fomentations; when the pains cease, the head should be pushed back to the brim, but if this be impossible instruments will require to be used.]

Again the cervix and os uteri may suffer only a partial constriction, and thus become inflamed, and retard delivery. The head of the child may rest on the pubic side of the pelvis in such a manner as to compress the anterior lip of the uterus, and prevent its dilatation. A band is thus formed before the head, which, when long pressed upon, is swollen, tender, and rigid. The treatment of the cervix when in this state has become a kind of *vexata questio* in obstetric practice. Some practitioners of station and experience have advised that the anterior lip of the os uteri be pushed up, by the fingers, above the head, in the interval of the pain, and there maintained until the returning contraction of the uterus drives the head below it; while others of equal reputation deem such practice to be objectionable, and calculated, rather to increase than to diminish the difficulty, by exciting more inflammation. I may mention the late Dr Hamilton, of Edinburgh, as holding the former opinion; Dr. Collins, of Dublin, the latter; as a proof how men of very extensive experience often arrive at opposite conclusions on what would seem to be a simple practical point. It is my duty neither to draw you into controversy nor to give you too dogmatic an opinion

on a question so nicely balanced by authority. I must assume, on the evidence of Drs. Hamilton, Burns, and Breen, that this kind of artificial dilatation may be accomplished in some instances with safety and success. My own experience, however, confirms that of Dr. Collins, and is opposed to this practise: the opportunities I have had of putting it to the test have taught me that success is by no means so easy as it is described to be, that the anterior lip may be pressed back again and again, and yet return to the same situation as before, that it is difficult to get the head to pass the introduced finger, and that these attempts, when unsuccessful, only increase the swelling and inflammation of the soft parts. I have also met with instances, in which, after a failure of this kind, the anterior lip was retracted without any assistance, when the contractions of the uterus succeeded in at length altering the direction of the head. It appears to me, therefore, that this kind of manipulation may be employed, and would be serviceable if the fingers were placed against the head of the child, in order to relieve the constriction of the anterior lip, and to direct the head more towards the pelvic cavity. I am still, however, disposed to object to the practice of artificial dilatation of the mouth of the uterus for the former purpose. While on this part of our subject, I must apprize you of a deception which may be produced by certain states of the os uteri. The anterior lip is sometimes hypertrophied, and projects so much before the head that it seems to be the cause of difficulty. It is scarcely necessary to say, that you will employ your time very fruitlessly if you attempt to push back this hypertrophied portion of the os uteri.

Lancet, June 21, 1845, *p.* 697.

On Pelvimeters. [His opinion respecting pelvimeters is such as every well-informed practitioner will agree with. He says,]

The simplest, and, we might add, the most efficient pelvimeter[1] is the hand of the practitioner. If it be the educated hand of the experienced obstetrician, the evidence is certain; but even the attentive student may require much accuracy by observing a few simple rules. In ordinary vaginal examinations, when one finger only is introduced, the superior part of the sacrum is quite out of reach. When the point of the finger, therefore touches the sacrum it is evidence that the sacrum must be pressed too much forwards; but if it touch the promontory, or just below it, the contraction at the brim must be such as to render it very doubtful if the head can pass. The length of the forefinger is four inches; but from the resistance of the soft parts, as well as of the remaining fingers which are without the vulva, not more than three inches of the forefinger can pass within the pelvis. If, therefore, the distance between the arch of the pubis, (taken below the sub-pubic ligament and soft parts adjoining,) and the promontory of the sacrum be only three inches, that between the superior surface of the symphysis and the same point must be less than three inches. You may, then, take it as a rule, that if your forefinger touch the promontory of the

sacrum, or near to it, the head will not pass. In more doubtful cases, there are other modes of examination to confirm your suspicions. In some cases, when the cavity and outlet are very wide, the whole hand may be introduced, and the degree to which the fingers are pressed upon when passed toward the brim of the pelvis will be your guide. In the standard pelvis, the fingers may be slightly separated from each other. In the pelvis which is contracted at the brim, but through which the head might pass, (at least to a certain distance,) the fingers are pressed close, but not so as to overlap each other. In greater degrees of disproportion, the fingers cannot be passed forwards without overlapping, and the degree to which this takes place will indicate the amount of contraction in the brim of the pelvis. In extreme cases, two fingers will hardly pass between the sacrum and the pubis. In other cases, where this cannot be done in consequence of the outlet being also distorted, you have, in this circumstance, additional evidence of the character of the pelvis. In some instances, the ischio-pubic rami are very close, and the coccyx abruptly bent; in others, having the same alteration in the coccyx, the symphysis pubis is pressed down towards it. In these varieties, it is difficult to make an examination. Only one finger, generally, can be introduced, and if with this distortion at the outlet, you find the sacrum also pressed forwards, you can hardly hope that the head will pass the brim. These modes of determining the disproportions of the pelvis are far more convenient, and (as it appears to us) are quite as efficient, as the more complicated contrivances to which we have referred. But we would again caution you not to assume too hastily, even with every evidence in this way obtained, that the head cannot pass the brim, until time and a close observation of the labour removes every doubt.

Lancet, July 5, 1845, *p.* 8.

On Exhaustion. [The premonitory symptoms indicating the approach of this are as follows.]

When the uterus is becoming weak, and its strength is, in the strictest sense of the term, almost exhausted, the pains become short and inefficient, the intervals between them longer, and sometimes they are quite suspended; but the nervous system being excited, the patient derives no advantage from such suspension. She does not sleep, but continues watchful, anxious, and restless; the pulse is increased in frequency, is very easily compressed, and its pulsations are disturbed and rendered irregular by the most trifling causes. The countenance of the patient is peculiar. To say that it is collapsed would not convey its exact expression. Watchfulness and anxiety are portrayed on features that equally indicate languor and listlessness. An observable change takes place, but to explain how is not easy. If these monitors be neglected, further symptoms of constitutional disturbance will soon present themselves. Constant watching, increased restlessness, hurried respiration, irregular chills, and slight delirium, all rapidly succeed each other, and hasten to the most unfavourable conclusion. When there is

the least reason to apprehend exhaustion, promptitude in delivery is imperative; but before interference is thus called for, much may be done to prevent its necessity. Rest is very important in these cases, because it is an evidence that the over-excited nervous system is tranquillized; therefore, when the pains are becoming weak, or return only at long intervals, a moderate dose of opium is often of great service; if the patient sleep, even for a short time, the uterine action is renewed with much more power. I have expressly stated a *moderate* dose of opium, because the case now under our consideration is that in which the same medicine has produced the most opposite effects, according to the dose administered, and, consequently, it has sometimes been discarded, because it had been misapplied. The object which it is intended to accomplish by opium, is to subdue the nervous irritation which proceeds exhaustion, and to restore, by rest, the energy of the uterus. The effect produced by too large a dose may be to paralyze all nervous power, and thus at once to cause uterine exhaustion. You must therefore exercise proper caution in the use of it; twenty to twenty-five minims is generally sufficient for the purpose. After a temporary rest has been thus produced, if the uterus still continues to act feebly, ergot of rye may be given in an equally cautious manner, carefully attending to its influence on the pulse, and especially on the circulation of the fœtus. If in either case, after giving this medicine, the rate of the pulsations be diminished, you must not persevere in its employment, otherwise the death of the child may be the result. For the same reason, a smaller dose, a scruple, repeated at intervals, is preferable to a larger one, half a drachm to a drachm, given at once. It is also necessary to be careful not to give secale cornutum if the delay in this stage arises from great disproportion between the head and the pelvis. It must be obvious to you, that in a case like this it would be very dangerous to use a means of exciting the action of the uterus, over which you can have no control. A preparation which exerts a specific influence on the uterus, which often causes the most violent action, and that, not returning at intervals, as ordinary pains do, but which excites a *continuous* effort of the uterus to expel the child, is not the safest to employ when there is much resistance opposed to this action. The remedy, when cautiously administered, is useful, however, in those cases where the delay chiefly arises from want of power in the uterus, which may be exhausted if not thus artificially stimulated to action.

Lancet, July 12, 1845, *p.* 29.

On the Forceps. [In laborious labour, where the head advances very slowly, the general rule, with few exceptions, is to leave the case to nature. When the head is impacted in the cavity of the pelvis, instrumental aid, of some sort, becomes necessary. Some consider the forceps, skilfully applied, adequate to this emergency; others maintain that unjustifiable injury to the soft parts will thereby be committed, and recourse must be had to the perforator.

To compare the forceps with the perforator in the case sup-

posed, we must remember that they can be, and are made, for compressing, as well as extracting, the head of the child. On this subject, Dr. Murphy says,]

We have already evidence before us to prove that the power of the forceps for this purpose is extremely limited. The experiments of Baudeloque are referred to in almost every popular work on midwifery, and notwithstanding the critical objections raised against them, they are sufficiently important briefly to state them to you. Being desirous to determine the extent to which the forceps could compress the head, Baudeloque performed nine experiments on the heads of still-born children with Levret's forceps, an instrument of the strongest kind, and especially adapted for compression. The utmost force was exerted to reduce the head, a force so great as to bend one forceps, although highly tempered; the head was not lessened more than two lines, unless where the bones were unusually soft and loose, and then only to four lines. These experiments satisfied Baudelocque that the diminution could not be, in any case, so much as accoucheurs had stated, and that the degree of reduction should never be measured by the distance between the handles, when pressed together, nor from the amount of force employed to approximate them.

In these experiments more force was used than you could venture to exert if the child were living, and yet the space gained was scarcely sufficient to admit the blades of the instrument to be introduced within the pelvis. They seem to me, therefore, conclusive as to the limited power of the forceps when used as a compressing instrument. Nor can I agree in the opinion of Dr. Rigby, that "the slow and gradual pressure of the forceps thus exerted (by tying the handles tightly together, and tightening them after every successive effort) upon the head of a living fœtus, will have a very different result to that of the experiments of Baudeloque and others, in attempting to compress the head of a dead fœtus by the application of a sudden and powerful force." It is impossible to grasp the forceps for the purpose of moving the impacted head, without applying to it a sudden and powerful force, and if this force be maintained in the interval of the pains by ligature, such powerful, constant, and at the same time unequal pressure, acting on the head of the child, would appear to me much more hazardous than even the compression of the contracted pelvis, which is known to be a frequent cause of the child's death.

The possibility, therefore, of reducing by the forceps the impacted head to that degree that will enable you to draw it safely through the pelvis, seems to me extremely doubtful. If it were the large head of the male child, advanced in its ossification, and wedged in the deep narrow cavity of the masculine pelvis, I would say it was impossible. The only case where it might perhaps, be successfully attempted, is in the diseased pelvis, which may be capable of some degree of expansion, and where the head of the child, being less ossified, is softer and more compressible.

Let me now direct your attention from the child to the mother, and admitting it is possible, and only possible, to save the former, let us inquire the risk to which the latter is exposed, in the attempt to accomplish this object. The very nature of the case implies an unusual degree of pressure on the soft parts between the head and the pelvis; congestion must be the result; and if inflammation has not already taken place, the passages are in such a state that inflammation could be most easily excited. The blades of the best contrived forceps cannot be applied to the head when it is tightly impacted in the pelvis, without bruising the soft parts to a certain extent. This contusion becomes a centre where inflammation takes place, which may increase to any extent, and terminate either in a local slough of the compressed part, or a general gangrene of the vagina, if the inflammation assume an erysipelatous type. In the former case, the separation of the slough may be the formation of vesico-vaginal fistula. In the latter, death may be the result. You will admit that such consequences are of too grave a nature to hazard for the *slight chance* of saving the child, and therefore, when you are placed in the unpleasant alternative, either to save the child at the risk of the mother's life, or to sacrifice the child in order to preserve her, you must adopt the maxim which governs British midwifery, and consider the safety of the mother to be your first object. But you will seldom be placed in such a dilemma, if you observe closely a case of this description. If you are satisfied that the forceps cannot be safely introduced; if you think that you cannot compress the head sufficiently to extract it without exposing your patient to a tremendous hazard: it does not follow that you must destroy the child in order to deliver her. In the great majority of such cases, nature provides against the difficulty of the case by doing so herself. When the head is thus wedged, the liquor amnii discharged, and the uterus strongly contracted about the body of the child, it is seldom saved from the effect of this extreme pressure; its death is the result; and if the case be left altogether to itself, the child becomes putrid, the bones of the head looser and more compressible, and thus it is possible that it might be expelled by the uterus. Formerly, it was customary to wait for "these signs of the death of the child" before perforating, but being those of putrescency, the patient was exposed to all the consequences that would follow decomposition of its tissues in the uterus, and hence the death of the mother was too often the result. But now we have it in our power to ascertain its death by another means, which is available long before putrescency takes place. The stethoscope has been found to be a valuable aid to the obstetrician; it sometimes enables him to determine the existence of pregnancy when all other means fail; but I know of no case where it is of more important service than in that which is before us, nor is there any in which its evidence is more certain. In pregnancy, when the child is small, the liquor amnii abundant, or the muscles of the abdomen strong, the fœtal heart may not be heard; but in parturition, when the liquor amnii is discharged, the child full grown, and per-

haps large, the muscles of the abdomen stretched to their fullest extent, its pulsations are perfectly audible, and if once heard, there can be no change in the situation of the sound, because the child is fixed in its position. A close attention, therefore, to the fœtal pulsations, is necessary in such a case; and when they rapidly increase in frequency, then intermit, again return more feebly, and ultimately cease, you can have no doubt that the death of the child has taken place. To prove to you the value of the evidence in this way obtained, I shall quote the very important experience of Dr. Collins as to these kind of labours. He says—"I have no difficulty in stating, and *that after the most anxious and minute attention to this point*, that where the patient has been properly treated from the commencement of her labour, where strict attention has been paid to keep her cool, her mind easy, where stimulants of all kinds have been prohibited, and the necessary attention paid to the state of her bowels and bladder, that, under such management, *the death of the child takes place in laborious and difficult labour, before the symptoms become so alarming as to cause any experienced physician to lessen the head.* This is a fact I have ascertained beyond all doubt by the stethoscope, the use of which has exhibited to me the great errors I committed before I was acquainted with its application to midwifery—viz., *in delaying delivery often, I have no doubt, so as to render the result precarious in the extreme, and in some cases even fatal.*" This observation of Dr. Collins would apply to many cases of perforation that are recorded, and which have been followed by such frightful consequences, that it is not surprising that they should excite the disgust of the profession. They were cases where the operation was useless, because performed too late. By means of the stethoscope it is in your power to prevent this, and to deliver the child in sufficient time to save the mother from injury. No one is justified in destroying a living child, unless there is clear evidence, from the symptoms, that the mother is in danger. According to the old rule of practice, therefore, you were placed in the dilemma, either to wait for such symptoms, or for the signs of putrefaction in the child—alternatives equally dangerous to her: but if the death of the child can be known the moment it takes place, and if it be true that its death precedes those dangerous symptoms, it is obvious that its removal by the crotchet is no longer objectionable, and perforation is deprived of all its horrors. So far as the safety of the mother and the preservation of the passages from injury are concerned, there is no comparison between perforation and the forceps. In this respect perforation is a far safer operation, if ordinary caution be exercised; the objection—the sole objection that condemns it, is the fact that the child must be destroyed, either by the uterus, or by the instrument. We freely admit the cogency of the argument; but when it is weighed against the still greater objection, that in the attempt to save the child, the soft parts of the mother may be injured to a most dangerous extent, while the preservation of the child is extremely doubtful,—when we find, in the imperfect history of these operations, such as they are given to us, that the child is very gen-

erally lost, or, if there be an exception in which the child is with difficulty saved, the case is recorded with that triumphant acclamation that proves the success to be unexpected,—when the risk to the mother is so great, and the prospective advantage so doubtful, you will admit that the balance is in favour of an operation by which, if properly performed, and with sufficient promptitude, the safety of the mother is at least secured.

Lancet, July 19, 1845, *p.* 57.

On the Induction of Premature Labour. [Respecting the induction of premature labour, one of the greatest improvements in modern obstetric surgery, from its holding out the chance of the life of both the mother and child, the Dr. says:]

Different modes of exciting the action of the uterus have been proposed: 1st, *By direct irritation*, as frictions over the uterus, artificial dilatation of the os uteri with the fingers, or by the introduction of a sponge tent; 2nd, *by the specific action of ergot of rye;* 3rd, and lastly, *by deranging the connexion between the uterus and the ovum*, either by detaching the membranes from the sides of the uterus, or puncturing the membranes and allowing the liquor amnii to escape. Of these means, the last is the most certain, but at the same time, one which it would be preferable to avoid if other means were efficient for the purpose, because the liquor amnii would ensure a more favourable dilatation of the uterus, and the child be more secure. Ergot of rye is unsafe, because of the child, the preservation of which is your only motive for interfering; therefore artificial dilatation by a sponge tent must be first tried, and if it fail, the membranes may be ruptured with a stilette. The action of the uterus sometimes commences immediately, but it may not begin for twenty-four or forty-eight hours after the operation.

Ibid, August 16, 1845, *p.* 171.

180.—*On Excision of the Os Uteri.* By James Syme, Esq., F.R.S., &c. [Excision of the os uteri was, on account of the marvellous cures said to have been frequently performed by it, in cases of cancer of the uterus, very slow in establishing itself as legitimate practice in this country. Cancer of the uterus is in reality of very rare occurrence, and removal of the diseased part presents even less chance of recovery than of any other part in which this disease may exist. Cauliflower excrescence, as Dr. Clarke named it is, however, very much more common than was formerly supposed, and it has been ascertained that the removal of this by the knife or scissors, is an operation perfectly safe and effectual. Dr. Clarke, when he wrote, had little to offer as regards treatment.]

A great step in advance has been made through the establishment of the important fact,—for which we are chiefly indebted to the surgeons of France, that excision of the os uteri, executed either by knives or scissors, is an operation perfectly safe and effectual when employed for the removal of growths not possessing a malignant

disposition. The discrimination of such cases has consequently acquired no small increase of value, though comparatively little attention has been devoted to it in this country.

In performing the operation, it is always desirable and in general easily practicable, to draw the tumour fairly into view, so that the excision may be effected without taking away either more or less than what is requisite, and without injuring the neighbouring parts. The most convenient instrument for this purpose is that which Dupuytren employed—the hooked forceps of Muzeux, who invented it for facilitating the removal of enlarged tonsils—or "*vulsellum*," as it has been improperly named by some writers, the old "*volsella*" being parent of the instruments which act upon the principle of dissecting forceps. By means of the double hooked extremities of this instrument deeply inserted into the morbid growth towards its base, where the texture is of firmest consistence, the tumour may usually be induced by steady traction of moderate force, to descend and present itself to view, when a bistoury or curved scissors may be used without any difficulty or danger. The assistance of a speculum should be taken to insert the forceps, and if it seems necessary in order to obtain complete command over the excrescence, additional instruments of the same kind are to be fixed into different parts of its substance. If the tumor cannot be made to protrude without resorting to an unsafe degree of violence, it may at all events be brought down in this way, so as to be within reach of the fingers, which will then form a safe guide for the scissors, as in the case just related. The hemorrhage is seldom more than very trivial, and when at all considerable, may be surpressed by filling the vagina with lint. In a case which happened fourteen years ago, and was, I believe, the first of the kind subjected to operation in Edinburgh, I visited the patient about an hour after cutting off the excrescence, and to my no small alarm, found the blood dropping from her bed upon the floor. As there had been frequent and profuse hemorrhage from the disease, I considered it necessary to use the most efficient means for preventing any further flow, and therefore pulled the bleeding surface into view, transfixed its base with a needle, conveying a double ligature, and tied both the threads firmly. Recovery was accomplished without any untoward symptom.

In removing polypus of the uterus, evulsion, excision, and ligature have been employed, and each of these modes of operation may be rendered the most eligible by peculiar circumstances of particular cases. But, in general, the combination of tying and cutting, certainly seems to be the best plan of proceeding. It has the recommendation of facility, efficiency, and safety. It accurately determines the limit of destruction, prevents the possibility of hemorrhage, and relieves the patient from the fetor, and other unpleasant consequences, which attend the slow separation effected by ligature. Finally, it has the testimony of experience in its favour.

Monthly Journal of Medical Science, July, 1845, *p.* 488.

181.—ON A CASE OF RUPTURED UTERUS, IN WHICH THE CÆSAREAN SECTION WAS PERFORMED.

By Wm. Jackson, Esq , Lecturer in the Sheffield School of Medicine, &c.

[The patient in the following case was 26 years of age, stout and healthy, and had had three children. All her labours, though severe and protracted, had terminated favourably, under the direction of a midwife.

In the present labour the pains proceeded slowly, from the contracted state of the pelvis, combined with an unusually large-headed fœtus.]

The midwife stated, that after severe suffering through the day, the head had advanced considerably in the pelvis, when about four p.m., during the continuance of a severe pain, there was a sense of something suddenly giving way, after which the head receded, and a considerable hæmorrhage followed. The patient became faint, and sickness supervened, but no actual vomiting followed. She continued faint, pallid, and restless, with ineffectual efforts to vomit; but no further uterine action followed, although she complained of distressing sensations of the abdomen,

[The parties beginning to feel alarmed, sent for a surgeon, and a consultation was held, when it was decided that rupture of the uterus had occurred, and the next point to consider was the mode of treatment proper to adopt under the circumstances. The patient was in an alarming state; pulse quick and feeble, great restlessness and anxiety, with slight attempts to vomit. To introduce the hand and draw down the fœtus through the lacerated womb would probably have caused instant death; gastrotomy therefore seemed to afford the only chance of saving the patient's life. This was consented to, and]

As a necessarily preliminary step, the urine was drawn off, and the patient was placed in a convenient position, on her back on the bed. The integuments of the abdomen being kept on the stretch by an assistant, an incision about six or seven inches was made with a scalpel, extending from two inches above the pelvis, to a short distance of the umbilicus. The peritoneum having been laid bare, an opening was made, and that membrane divided co-extensively with the external wound. The omentum now protruded, which being carefully held on one side, a tense bag containing a yellow fluid presented itself, being in fact the ordinary membranous envelope of the fœtus in utero. The contents, consisting of the liquor amnii, together with a large quantity of coagulated blood, were evacuated by a puncture, and the head of the child presented itself. The fœtus wae extracted by the feet, and it was found that the external wound was barely sufficient to allow of the passage of its head. The placenta had been expelled from the uterine cavity, and was lying amongst the intestines, together with a considerable quantity of fluid and coagulated blood, all of which was removed. The time

occupied in the performance of this operation was not more than a few minutes, and during its continuance, the patient, although perfectly conscious, remained quite tranquil. The omentum and intestines protruded from the wound, but were easily replaced, whilst the edges of the wound were brought together by sutures, strips of adhesive plaster, and a firm bandage completed the dressing; after which our patient was placed in a favourable position. The poor woman bore the operation with great fortitude, and expressed herself as being very much relieved, and considered that she had terminated her labour with much less suffering than she had experienced on former occasions. The pulse almost immediately rallied, and the appearances of extreme exhaustion subsided. The child—a female—was considerably above the middle size, weighing eleven pounds and a quarter, and had no doubt ceased to exist at the period of the accident. Wine and a full opiate were given, and we left her in a composed state at nine o'clock, under the charge of an experienced nurse, who had instructions to administer nutritious fluids, and, if needful, more wine.

[She slept the greater part of the night, and in the morning complained of slight after-pains. The pulse was compressible, about 130 or 135; tongue slightly furred; abdomen sore and somewhat tumid. A pint of urine was drawn off by catheter, pills of gr. j. of opium and gr. ij. calomel directed to be given every four or six hours, and nutritious fluids to be continued.

The case progressed well so far; the third day after the operation she could turn in bed to either side without producing much pain, and the system was evidently making great attempts to remedy the effect of the two great injuries, the accident and the operation. She continued until the eighth day, and then gradually sank.

A post-mortem examination was held, but as our business is principally with the part immediately concerned, we extract it, and refer those of our readers who wish a fuller account to the journal in which the case is recorded.]

The uterus had contracted to the size to which it is usually reduced about the seventh day after delivery. It presented a perfectly normal appearance, excepting a slightly increased vascularity, and felt firm in its general structure. Its outer covering, as before stated, was slightly adherent to the contiguous peritoneal surface. Upon raising up this organ towards the pubis, a dark-brown ragged opening was discovered, chiefly seated in the posterior wall of the vagina, and apparently extending through a small portion of the cervix uteri. The length of this opening varied, according as it was enlarged by stretching, or suffered to remain in its original state with the parts *in situ*. The variation of the laceration was thus from three to five inches. Besides this longitudinal laceration, there was a considerable transverse division just at the point where the vagina joins the cervix. There had been no attempt to close this lacerated wound by any reparative process; but the contiguous surfaces of the peritoneum had become so generally adherent as

effectually to prevent the secretions or discharges from the uterus or vagina from passing into the abdominal cavity. The edges of the lacerated opening were irregular and jagged, and of a dark brown colour, but free from any gangrenous state. The inner surface of the organ presented nothing unusual in its appearance.

[Respecting the practice to be adopted in these cases, it is necessary to divide them into those in which the fœtus has wholly escaped into the abdominal cavity, and those in which part is still left in the uterus. The practice in the latter class of cases is clear, to deliver immediately *per vias naturales*: and the rule in this country is to do the same in the first class, unless the os uteri be rigid or there exist much pelvic deformity.]

Now, in the present instance, neither of those conditions existed excepting the former in a slight degree. The reasons which induced us to resort to gastrotomy were:—1st, the extremely exhausted state of the patient; 2nd, the apparently large size of the fœtus, thus constituting a disproportion, even in a pelvis of natural dimensions; 3rd, the long period of time which had elapsed since the occurrence of the accident, and as regarded the method of delivery generally advocated; 4th, the risk of enlarging the lacerated opening in the uterine parietes; 5th, the violence necessarily involved in the delivery by the natural outlet, first through the laceration, and secondly of the head through the pelvis, presenting to our view a hopeless, heartless proceeding. There appeared to us far less of violence, force, and rashness in the simple incision of the abdominal muscles. A conviction filled our minds, that our patient would inevitably have sunk exhausted from the violence necessarily attendant upon the ordinary mode of delivery. Is it not probable that, in cases in which the rupture is in the substance of the uterus, the organ immediately contracts after the expulsion of its contents; and, if so, in dragging the child through an opening, now considerably diminished in size, severe additional violence would be inflicted?

[The various points of the subject are briefly recapitulated as follows.]

1st. There have been recorded a few, (one or two?) cases of recovery from rupture of the uterus, complicated with escape of the fœtus into the peritoneal cavity, having been left to chance. Whether these were cases of rupture, or of extra-uterine pregnancy, is now extremely doubtful. They may be classed amongst the fabulous.

2nd. There are few well authenticated examples of recovery in which the delivery had been effected *per vias naturales*.

3rd. A few recoveries have resulted in cases wherein gastrotomy had been the mode of delivery, and equally entitled to our credit.

[We certainly think with Mr. J. that the cæsarean operation holds out the best prospect of saving life in such cases, and therefore that a full and impartial trial should be given it, though we should be sorry to see introduced the rash and hasty opening of a living woman's belly so frequently practised on the continent.

The above case, in our opinion, shows clearly the necessity for the attendance of a duly-qualified practitioner on every the most simple case of natural labour. It is the more valuable in this respect, that Mr. Jackson gives the account without any such view, yet we doubt not most of our readers will agree with us that, had a competent person been in attendance, he would, if the labour had been allowed to advance to the full time, have checked the inordinate uterine action, and have used instruments, on finding the great disproportion between the fœtal head and the pelvis.—Ed. B. R.]

Provincial Medical and Surgical Journal, Sept. 3, 1845. *p.* 549.

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182 —ON PROTRACTED LABOUR FROM INSUPERABLE RIGIDITY OF THE OS UTERI.

By J. C. W. Lever, Esq., M.D., &c.

[Two cases of great interest, in which labour was protracted by an insuperably rigid state of the os uteri, have lately been published by Dr. Lever. The first was under the care of Mr. Dry, of Walworth; the patient 23 years of age, in labour with her first child. On the 10th September, 1844, Mr. D. was called, found slight pains; os uteri scarcely dilated; liquor amnii evacuated; a sedative was given, and nothing more then seemed necessary. On the 12th the pains had become strong and frequent; the os uteri was dilated to the size of a shilling, thick and rigid, and the anterior part of the cervix was pressed upon, especially during pain, by the head. As the pulse was full and hard, she was bled, and an enema was administered, but no further dilatation took place, though the pains continued as powerful and repeated as before. Belladonna was also tried without effect.

According to Dr. Lever's advice, complete nausea was produced by tartar emetic, and maintained for some time; this was followed by a full dose of opium, but the rigidity of the os uteri still remained, and the anterior part of the cervix actually increased in thickness. At four o'clock that afternoon Dr. L. called, and found that a large portion of the uterus had been expelled a short time before, during a violent pain.]

The patient's countenance was anxious, and her face was covered with perspiration: her breathing was quick, but not laborious: her pulse was 140. She was restless, and threw herself about the bed. The abdomen was rather tender: the pains were rapid in succession, and forcible: the vaginal discharge was horribly fœtid: the anus was patent, and fluid fæculent matter was running out: the perinæum was of a dark-red colour, swollen, and œdematous. On examination, the head was found pressing on the perinæum, and the *fourchette* had commenced to lacerate: the head seemed large, firmly ossified, and there appeared to be no overlapping of the bones; and when pressed upon it did not retire. Fearing that each pain would lay the rectum and vagina into one canal, after evacuating

the bladder I introduced the perforator, thoroughly evacuated the cerebral mass, and delivered, by means of the crotchet, without greatly increasing the laceration that had occurred. The placenta in a short time followed. After delivery, the vagina, as high as could be seen, was of a dark dull-red colour; but caused the patient no particular pain when pressure was made. An opiate was given, and absolute quietude enjoined. On the following day, the 14th, she was found to have had several hours' sleep. Her countenance was pale: her breathing quick: her pulse 140, small: her tongue streaked, but moist. The abdomen was free from tenderness and tympanitis: but the bladder was distended, no urine having been passed since her delivery: a catheter introduced abstracted twenty four ounces, dark and muddy. The uterus was contracted, firm, but very moveable. Anus gaping; almost constant discharge of the fæculent matter, of which she was perfectly conscious, although she did not possess the power of restraining the evacuation. The external parts were swollen, and of a dark colour. The fotus papav. c. sp. vin. rect. was ordered to be applied frequently; and an anodyne mixture was prescribed to be taken every four hours.

[She continued to sink, and died next morning. No post-mortem examination was allowed.

The patient in the second case related, was about twenty-eight years of age, and had previously had prolapsus uteri, and violent inflammation of the uterus and vagina. She had worn for a considerable period, a ball and socket pessary, to which no doubt the rigid state of the parts was in some measure owing. On the 10th December, Mr. Evans, of Southwark, was called to visit her.]

On examination, he found the os uteri seated high up, and directed backward: it was undilated, very rigid, and as thick as a finger. The pains, which were very severe, continued until midday, and with no other alteration than a copious lubrication of the passages, and a less backward direction of the os uteri. He prescribed a dose of castor-oil, which operated well. In the evening the pains had much abated, although they had not entirely ceased. Forty minims of the tincture of opium were prescribed, with the effect of producing some sleep. At three a.m. (Wednesday) the pains returned with increased severity, but with no alteration in the state of the os uteri. At eight a.m. she was bled to sixteen ounces, which caused her to feel rather faint, and the uterine efforts to abate their violence for one or two hours. In the afternoon the os uteri had lost much of its thickness, but still admitted but of one finger. It was peculiarly rigid, and like a ring, and, during pain, the head could be felt bearing forcibly on the cervix. As there was constant desire and attempt to pass the urine, without flow, the catheter was introduced, an emollient enema was administered, and the nurse was desired to steam the pudenda with hot water. Pulse 90, the spirits good, and the vagina free from heat. Towards night there was another remission of pain, but no sleep. After midnight the uterine efforts again became severe; and at seven a.m. on

Thursday the pulse rose to 120; the passages became hot and dry; the os uteri was thinner, but merely admitted the tips of two fingers, and still felt like a hardened ring; the cervix was dilated, thin, aad greatly on the stretch. Mr. Evans prescribed ant. pot. tart. gr. $\frac{1}{4}$ every two hours, administered a second emollient enema, smeared the os uteri with extract of belladonna, and emptied the bladder by means of the catheter. At two p.m. there was no alteration. Mr. Evans called on me, to consult respecting the propriety of incising the rigid ring-like edge of the os uteri. Accompanying him to the house, I found the patient with an anxious countenance; her tongue was dry and brown; her pulse 120, and small; and the abdomen tolerably free from tenderness, On examination, the head of the child was found to be partly advanced into the cavity of the pelvis, but surrounded by the cervix uteri, which which was œdematous: the os was barely as large as a half-crown piece, and, with the exception of the anterior fourth, felt as if it were drawn in with catgut: the anterior fourth was swollen, soft, and elongated. During her pains, which were most violent, the corrugated scalp was forced through the disc of the os uteri. The pains for some time had been frequent, vehement, and very forcing. As delivery seemed advisable, and as there appeared no satisfactory reason for supposing the child to be dead, I agreed with Mr. Evans in the opinion that it was a case in which incision of the os uteri might be performed with a hernia knife. I divided the whip-cord margin of the os uteri towards the posterior part of the sides of the pelvis, in the direction of either sacro-iliac synchondrosis. The incisions were made during the contraction of the uterus; the patient made no complaint; in fact, they gave her no pain. The immediate result was, a diminution of the œdematous condition of the cervix, and the loss of a small quantity of thin watery blood. The pains, which had been so forcing, did not at first entirely cease, but were much moderated: still, feeble as they had become, slight progress was made during the half hour. I remained. Afterwards, there was a cessation of pain for nearly an hour. They then recommenced, and, at four p.m. the os uteri had dilated to the extent of two inches diameter; and, at a quarter to five, a female-child was expelled, still, but was resuscitated on the application of the usual remedies. The placenta and membranes speedily followed. At ten she was in no pain, felt comfortable, and pulse 100.

[The recumbent position was maintained for three weeks, at the end of which time she rose, less troubled with prolapsus uteri than after a miscarriage which occurred about two years after the severe attack of inflammation.

Bearing down became more troublesome when she got to her work again, but the secretion of milk was copious, and she manages to suckle her child.

There seems every reason to think that the division of the rigid os, performed by Dr. Lever, was the means of saving this woman's life. He says respecting it:]

The operation itself is exceedingly simple and painless; and, if performed in the way I shall recommend, unattended with hæmorrhage. The patient should be placed on her left side, in the usual obstetric position, and brought to the edge of the bed; the fore-finger of the left hand should, in the absence of pain, be passed to that part of the os uteri intended to be incised, and, if possible, its point should be slipped within; then, directing a probe-pointed bistoury or hernia-knife along the finger, we should wait for the occurrence of pain, when the incision may be made by passing the cutting edge of the instrument against the indurated margin of the os. The immediate effects of the incision will be the discharge of a small quantity of thin watery blood; especially in those cases where œdema of the cervix is present. In the case under consideration, the external tissues of the uterus contracted more than the internal, so that the wound seemed longer without than within. I selected the sides of the mouth for the situation of the incision, for several reasons: firstly, at the sides of the womb, the rigidity was the greatest; secondly, it is at the sides of the womb we usually find lacerations, when they take place spontaneously, as is frequently seen in protracted labours. Where the waters pass off early, and when the os uteri is thin and tense, such a lesion is by no means unusual. I have on many occasions pointed it out to the students of this hospital, who have filled the office of obstetric clinical clerk. Again, in making the incision at the sides there is no danger of wounding the bladder in front, or the rectum behind; and lastly, as in most cases there will be found an elongation, swelling, and congestion of the anterior lip, serious hæmorrhage might result if this part of the womb were divided. Some writers have recommended a crucial incision; but in my opinion such will be found unnecessary. A further tearing of the parts may take place during the passage of the head; but, as in the case of occluded os uteri, operated upon by Dr. Ashwell, Mr. Tweedie, and myself, it is usually slight, and confined to the vagina. Before the operation a careful examination of the os uteri should be made; for we sometimes find this part of the womb communicating to the finger a strong pulsation, from the presence of a large vessel coursing along the rim; and in the truth of this observation I am confirmed by the experience of Mr. Power. After the incision the pains may moderate, or may subside for a time, as in the case before us; but on their renewal the obstruction will give way; and, if there exist no pelvic deformity, they will suffice to terminate the delivery. Not unfrequently a slight and temporary degree of faintness follows the operation, during which uterine contraction is lulled.

[Dr. L. concludes his paper by a few remarks on artificial dilatation which are well worthy of attentive perusal. He affirms that, when attempted in cases like the foregoing, it is almost certain to produce laceration, with irritation, inflammation, gangrene, or even death. At a post-mortem on a female at which he was present, who died within forty eight hours after her delivery, in which this prac-

tice was used, extensive peritonitis with effusion of lymph, and lacerated os uteri in several places were found. This affords strong confirmation of the above opinion.

At the same time it is needful to warn the young and enthusiastic practitioner that none of the gentler modes of producing relaxation, such as tartar emetic, the warm bath, &c., should be neglected; nor should the use of the knife be delayed until symptoms indicative of an approaching state of collapse appear.

The following propositions are submitted as the result of experience on this subject;—]

1. That insuperable rigidity of the os uteri occasionally occurs, over which the usual remedies exercise no influence.
2. That such insuperable rigidity may lead to a partial or complete separation of the cervix.
3. That, to prevent such a serious lesion, two methods of treatment have been recommended: the one consisting in artificial dilation; the other, in incising the rigid and contracted os uteri.
4. That artificial dilatation, in most cases, is unjustifiable, from the serious unjuries it occasions, and the consequent irritation and inflammation.
5. That, under such circumstances, an incision of the os uteri, in one or more places, should be performed.
6. That the operation is unattended with danger, unaccompanied by pain, and, if rightly performed, free from copious or dangerous hæmorrhage.
7. But the operation, to be successful, must be performed before there are symptoms of approaching collapse.

Guy's Hospital Reports, Oct. 1845, *p.* 173.

183.—ON THE TREATMENT OF PUERPERAL CONVULSIONS.

By W. Tyler Smith, Esq., M.B L., &c.

[In Vol. XI., Art. 133, we noticed some of Dr. Smith's ideas of the nature of puerperal convulsions. According to his views as there stated, the spinal system is chiefly concerned in the production of this form of convulsion, and therefore all our remedies must be suce as affect the nervous system.

"Remedies affecting the spinal system," says Mr. S. "very naturally divide themselves into those which act on the central organ, the spinal marrow, and those which affect the extremities of incident spinal nerves." All which he considers in his first communication are of the first class.]

Bloodletting.—The action of bloodletting on the spinal marrow is greatly modified by the condition of the circulation. In fulness of the vascular system, it is the most powerful sedative of spinal action we possess. Hence, venesection is the grand remedy in the simpler form of puerperal convulsion, where the disease chiefly depends on stimulation of the spinal marrow by excess of blood, on the mecha-

nical pressure exerted by the blood on that organ, together with the counter-pressure of the distended brain on the medulla oblongata. In such cases, bleeding should be performed with a view to its sedative action on the spinal marrow, and to avert the mechanical effects of vascular pressure from this organ. Alone, it will be sufficient to subdue the disease, particularly when the fits come on before the beginning of labour, or after delivery. But another most important intention of bloodletting should never be lost sight of—namely, that of preserving the brain from injury during the convulsion. Besides the *primary* cerebral congestion, which has been the cause of the attack by its counter-pressure on the medulla, the convulsive action itself, with the glottis closed, exerting great muscular pressure on the whole vascular system, and causing, as it does, the greatest turgidity of the vessels of the head, is a dangerous source of fatal cerebral congestion, or of serous or sanguineous effusion. As in the case of epileptics, women in puerperal convulsions frequently die of apoplexy, produced by the immense pressure exerted on the cerebral column of blood during the fits. It is in a great measure the effect of bloodletting in warding off the accident from the brain that bleeding is so universal in this disease. The due recognition of the distinct operation of bloodletting on the cerebral and spinal systems is of the utmost consequence. In plethoric states of the circulation, it is in this disease, *curative* in its action on the spinal marrow, *preventive* in its action on the brain.

In the absence of definite ideas regarding the effects of bloodletting in this malady, it has been often pushed to excess, or practise where it should have been altogether avoided. In the numerous cases where, beside vascular excitement of the spinal marrow, some irritation of spinal excitor nerves exists as a conjoined cause of convulsion, repeated bleedings will often fail to subdue the disease, unless the *eccentric* irritation be at the same time removed. When irritation of the uterus, the rectum, or the stomach, is in part excitor of the convulsion, bleeding alone cannot be relied on. It may at first diminish the impressibility of the *central* organ, rendering it less susceptible of the incident irritation, but if persisted in to a large extent without the removal of the *eccentric* irritation, it becomes in the end positively injurious, by increasing instead of diminishing the excitability of the spinal marrow.

[The propriety and extent of venesection are to be estimated, not by the violence of the disease, but by the state of the circulation in the intervals of the fits. After noticing that patients not rightly bled at first are frequently subjected to successive depletion till the loss of blood itself becomes the cause of the final seizures, he says]

Similar remarks would apply with almost equal force to the other parts of the common antiphlogistic regimen. Nearly allied to the *modus operandi* of bleeding are the effects of nauseating doses of emetic tartar, which have been found so serviceable in the treatment of puerperal convulsions by Dr. Collins. It is extremely probable that this remedy acts on the spinal system through the medium of its effects on the circulation.

[During the attack of convulsion the glottis is in great part, or wholly closed, and Dr. M. Hall questions if a true convulsion ever occurs without this symptom, and the cerebral and spinal congestion it occasions. Cold water must be dashed over the face or chest, to excite sudden inspiration and dilation of the glottis. Excitation of the incident nerves in this way has been known to prevent a convulsion.

Harvey mentions the case of a woman who became comatose during labour, and was recovered by stimulation of the trifacial nerve in the nostrils. Denman also relates a case, where a woman had a convulsion at every labour-pain, but he kept off the attacks, till delivery was completed, by sprinkling cold water over the face on every accession of pain.

Cold applied to the head by napkins, iced water, ice itself, and cold water poured from a height, are approved remedies in puerperal convulsions. Does the cold act as a sedative on the cerebral portion of the spinal marrow, or does it lessen the distended state of the cerebral circulation? It probably acts in both these ways. Which, used in the form of continuous douche it would tend to excite acts of inspiration, and thus dilate the glottis.]

The application of cold to the spine as well as to the head may hereafter be found beneficial in puerperal convulsions. Whenever cold in any form is resorted to, its use, except for the purpose of exciting the respiration, must be continuous, as the intermittent application of cold locally or generally; would excite instead of allay the spinal system. The benefit derivable from cold must arise from its local action on the nervous centres, because in tetanus, the purest form of increased morbid spinal action, cold applied to the spine is serviceable, whereas, when applied to the whole surface of the body, it is extremely dangerous, and even fatal.

[It is important that we should learn precisely the true action of opium on the spinal system. Thus, some give opium to allay after-pains; others say, you increase their energy; some say, it excites contraction in uterine hæmorrhage; others maintain that it produces inertia, &c. There is a great discrepancy of opinion with regard to the propriety of its administration in puerperal convulsions.

When a frog is narcotized by opium, the slight touch produces universal convulsions. Reasoning from this fact, we should judge opium to be an excitor of the spinal system; its absolute failure of arresting spasm in tetanus confirms this. Belladonna, on the contrary, acts as a sedative to the spinal marrow.

Mr. Bonney suggests that it stimulates indirectly the reflex actions. Besides this Mr. Smith thinks there are good reasons for believing it to be a direct excitant of the spinal system.]

Some striking distinctions may be made respecting the administration of opium under different circumstances, particularly in puerperal convulsions, If a dose of opium be given in this disease in a full state of the circulation, before bleeding, there is an aggravation

of the disorder; while if it be given in puerperal convulsions in an anæmic subject, or after excessive depletion, it is of great service. If in a case of convulsions opium be given at the commencement, it is dangerous in its effects; but the same medicine is frequently valuable in the advanced stage of the same case when the vascular system has been powerfully depleted. Thus it would appear evident that in convulsions with a full state of the circulation, opium is a *stimulant* to the spinal marrow, while in convulsions with anæmia, it is distinctly *sedative*. It is certainly an important point in practice, that the effects of opium in puerperal convulsion depend on the state of the circulation; that in plethoric or inflammatory conditions it is always dangerous, while in anæmia and debility it may always be used beneficially.

[A case is related by Mr. Charles Vines, of Reading, which illustrates some important points in the pathology of puerperal convulsions, and seems to confirm the above views on their nature.

The patient, 20 years of age, when eight months advanced in her first pregnancy, was suddenly seized with convulsions. When Mr. Vines first saw her, the symptoms were:—Face and whole body livid, features distorted, frothy mucus about the mouth, œdema of the upper extremities, frequent and violent convulsions, and perfect unconsciousness; there was also inordinate and tumultuous action of the heart, and a quick, feeble, fluttering pulse.

On examining the abdomen, the lower part was found greatly distended, and retention of urine was suspected. The catheter was passed, and 5½ pints of urine withdrawn. Great improvement of the symptoms followed. There was no return of the convulsions after this evacuation of the bladder.

The patient had had for some weeks, œdema of the hands and feet, which when recurring in these cases, has lately been shown to indicate albuminuria. The cause of the fits seems to have been the continued irritation of the vesical nerves; at all events they were kept up by it.]

It appears clear that the irritation of the vesical nerves was conveyed to the spinal centre, and reflected upon the motor nerves and the muscular system in the form of convulsions; how, otherwise, can we account for the cessation of the fits, and the speedy return of consciousness, when the local irritation was removed.

Lancet, June 21, 1845, *p.* 706

184.—*Iodide of Potassium in Suppressio Mensium.* By J. Aldridge, Esq., M.D., Dublin. [The employment of iodide of potassium as an emmenagogue, after the failure of our ordinary and well-known remedies, was first recommended by Mr. Pinching of Dublin. Dr. Aldridge having had frequent opportunities of confirming its value in such cases, points out the conditions under which we may expect benefit from its use.

These are where the absence of the catamenial discharge, is dependent on uterine irritation, whether from exposure to cold, mental

emotion, or other causes, and accompanied by pain in the loins, aching of the head, palpitations, &c. The treatment most serviceable in these cases is confirmatory of the inflammatory nature of the disease, bloodletting being a necessary preliminary to the use of actual emmenagogues. In continuation Dr. A. says,]

Now these are the cases in which iodide of potassium will b[e] found serviceable. That this medicine is capable of directly combating irritation is proved by its utility in periostitis. Any one who has had occasion to observe its magical effects in this disease must be led to the conclusion, that it acts directly on the vital aberration which is its cause. The manner, almost immediate, in which the pain abates, and the other phenomena of the fibrous inflammation disappear in many cases, will not permit the supposition of its effects being secondary, either to a critical secretion of any kind, to the supervention of a substitutional disease, or to any of the other fantasies to which the effects of medicines are usually ascribed.

Just as tartar emetic acts in pneumonia, and as calomel in iritis, does hydriodate of potash subdue the low and nearly latent metritis upon which this form of amenorrhœa depends. Like the medicines alluded to, the contra-stimulant efficacy of the hydriodate, will be increased by previous depletion. These means of themselves are frequently sufficient to restore the menstrual secretion, when the suppression has been recent, in a young robust girl. If they do not at once succeed in restoring the secretion, the employment of drastic purgatives, blisters to the sacrum; or, what I prefer to either, an electrical current from the lumbar spine to the pubis, will be, in general, much more successful in consequence of the previous treatment. The dose in which I have been in the habit of exhibiting the hydriodate, has been that of ten grains three times a-day; and I have never continued it for more then four or five days.

I may add the caution, never to treat amenorrhœa unless the general symptoms of suppression be present. In cases of chlorosis, it is the diseased state of the blood you have to remedy; in morbus cordis and phthisis, your treatment must always be subordinate to the principal disease; and in amenorrhœa from uterine irritation, the remote symptoms of the head and chest are always sufficiently marked. If there be not chlorosis, phthisis, heart disease, or vicarious hæmorrhage, and if the menses be suppressed without oppression of breathing, vertigo, and drowsiness, the chances are that the patient is pregnant. These chances will of course be increased if there be morning sickness, &c.; but the existence of the ordinary symptoms of incipient pregnancy are very generally known, and will be sometimes concealed. Cupping, electricity, and aloetic purgatives in commencing pregnancy, are means not calculated to increase a physician's reputation.

Dublin Hospital Gazette, Oct. 1, 1845, *p* 50.

185.—*On Retroversion of the Uterus.* By Edward Rigby, Esq., M.D., &c. In all cases of retroversion, especially where the reduction presents more than ordinary difficulty, I find the plan proposed

by Professor Naegelé, viz., of introducing the whole hand into the vagina, far superior to pressing up the fundus by two fingers of the left hand passed into the rectum, while we endeavour to pull down the os uteri by the index finger of the right hand. By introducing the hand with the palm upwards into the vagina, as the patient lies upon her back, we can get the points of the four fingers beneath the tumour, and press it upwards and somewhat forwards with great effect, while the hand itself, putting the posterior wall of the vagina forcibly upon the stretch, pulls down the os uteri at the same moment. This will be easily understood if we bear in mind the condition of the vagina when the uterus is retroverted; the anterior wall is violently dragged upwards by the os uteri, behind the symphysis pubis, while its posterior wall is found loose and doubled into a species of *cul de sac*. It is into this that the hand passes in the attempt to reach and press up the fundus; it is thereby rendered very tense, and, from its attachment to the uterus at the cervix, it acts in the same way as a cord does round a pulley; the same effort which tends to push up the fundus, tends also to pull down the os and cervix uteri.

The value of this mode of reducing a retroverted uterus struck me forcibly in a case which occurred in the unimpregnated state some years ago; she had been under treatment some time on account of inflamed cervix uteri, with severe lancinating pains, and much general derangement of health; the uterus was evidently much engorged, and both heavier and larger than natural; the abdomen was large and flabby, and there was considerable hemorrhoidal congestion. On carrying a heavy weight up stairs she suddenly felt as if violently strained, and this was immediately followed by the ordinary symptoms of retroversion. The bladder was even more distended than in the last case, the abdomen was much enlarged, and she looked like a woman in the latter months of pregnancy. My friend, Mr. T. A Richards, of Camberwell, who was one of the house surgeons to the General Lying-in Hospital at the time, assisted me to draw off the urine, the quantity of which was truly enormous.

During her involuntary efforts to strain, which the severe bearing down pain every now and then excited, the fundus was forced quite down to the perineum. The hand was introduced into the vagina, and after a slow but steady effort, the fundus was raised above the brim, and the uterus righted. I have seen this patient repeatedly since, and she has had no more return of the displacement.

Medical Times, Oct, 4, 1845, p. 27.

186.—*New Vaginal Plug.* [After remarking the error into which anatomists have universally fallen, of describing the vagina as a cylindrical canal, of nearly equal diameter throughout, M. Colombat states that, though this applies well enough to the portion near the outlet, where it is firm and round, that at its upper portion it is extremely dilatable, so much so as even to allow of examining the

corpus uteri. In early abortion attended with flooding, and frequently also in hæmorrhage, this part is usually found greatly distended. Instead of the common sponge tent, which is therefore quite inadequate to the purpose for which it is intended, Dr. Meigs employs]

A tampon, consisting of a single piece of sponge, is, in the translator's opinion, inefficient, inasmuch as a sponge of sufficient dimensions to fill up this great dilatation, cannot readily be introduced through the os externum. Hence the tampon that he invariably prefers consists of portions of linen torn into squares of three or four inches, of which the pieces are successively introduced until the cavity is quite filled. Such a tampon very rarely fails to suppress the hæmorrhage of an early or embryonal abortion.—*Meig's Translation of M. Colombat on the Diseases of Females.*

Medical Gazette, Sept. 19, 1845, *p.* 888.

187.—*Treatment of Pruritus Vulvæ.* Having been a great many times consulted for the relief of pruritus vulvæ, and most frequently in pregnant women, I have rarely had occasion to order anything more than the following formula, viz.—

℞. Sodæ borat. ℥ss.; morphiæ sulphat. gr. vj.; aq. rosa destillat. ℥viij. M.F. sec. art. mist.

I direct the person to apply it thrice a-day to the affected parts by means of a bit of sponge, or a piece of linen, taking the precaution first to wash the surfaces with tepid water and soap, and to dry them before applying the lotion. I can confidently recommend the prescription as suitable in most of the cases of this most annoying malady.—*Dr. Meigs.*

Medical Gazette, Sept. 12, 1845, *p.* 851.

188.—*Uterus Perforated by Foot of a Child, in Labour.* By Thos. Williamson, Esq., M.D., Leith. [An extremely interesting case of perforation of the cervix uteri by the foot of the child, has occurred in the practice of Dr. Williamson, of Leith.

The patient was 19 years of age, and had arrived at the full term. The doctor was suddenly sent for in the evening, as the patient's friends thought that labour had commenced. On examination, however, the os uteri was found entirely closed, and the presentation unascertainable. She slept during the night, and by morning regular uterine pains had commenced. The liquor amnii had escaped, and the left foot was found presenting.

A short time after the second examination, the patient was seized, at short intervals, with three strong and remarkably violent pains.]

From the character of these pains, I was induced to make a third examination. My surprise was very great at finding the change which had taken place. Instead of the left foot being still within the uterus, and fairly placed for exit through the *os*, as formerly, I now found that it had effected a complete passage through the *substance* of the anterior section of the uterus, about an inch from the

margin of the natural orifice. In fact, not only had the foot passed through this oblique rent, but the whole leg up to the knee; the limb to this extent lying in the vagina. No hæmorrhage resulted.

Scarcely had I time for deliberating as to the proper mode of procedure under these circumstances, ere another pain, as violent as the three preceding, forced the foot, leg, and thigh, beyond the external parts, carrying with them a thick band of uterine substance, formed by the tissue between the natural and preter-natural openings.

I found myself called upon to adopt some immediate step for the safety of the patient. The thigh was riding as it were over this thick uterine band, and I was not without much apprehension that, should another labour pain of similar violence with the preceding supervene, one of two effects would inevitably result; either the thick band of the uterine fibres would give way, or more likely, the rent would extend through the uterine wall and peritoneum. The former termination, as the least of two evils, I was now determined to anticipate (provide uterine action should supervene), by at once cutting through the tight encircling band. But the immediate performance of this operation was rendered unnecessary by the suspension of uterine action.

I had previously sent for the assistance of my friends, Drs. Anderson and Combe, and was glad at the arrival of the former gentleman, to avail myself of his long and extensive experience. In consulting upon the case, it was first thought indispensably necessary to divide the opposing band. Alive, however, to the risk of hæmorrhage incurred by this procedure, it was afterwards agreed that delivery should be attempted, by endeavouring to return the protruding member through the lacerated opening, and bring the foot through the proper *os uteri*. The cessation of labour pains favoured me in this undertaking, in which I succeeded, although not without experiencing considerable difficulty. Shortly thereafter, the uterus again commenced to act, and in little space of time the body was delivered. Some little difficulty was experienced in disengaging the head from the pelvis; but through the assistance of Dr. Combe, who had by this time also arrived, complete delivery of the child was effected. The placenta speedily followed, and my patient was left comfortable and happy in the possession of a living child. For three days no bad symptoms followed; the milk was secreted in proper quantity, and the pulse remained about 80 beats in the minute. On the morning of the fourth day, however, my patient experienced a severe rigor, followed by febrile symptoms. Her pulse rose to about 180 beats in the minute, and continued so for the subsequent three days, when it again fell, and the febrile symptoms disappeared. There was not, during this attack, the slightest evidence of local pain or irritation; and the patient, upon the tenth day from delivery, was perfectly free from complaint, and able to sit up.

Northern Journal of Medicine, Sep. 1845, *p.* 205.

189. – *Causes of Labour and of the Duration of Gestation.* The menstrual period in the human female comes on, it is well known, at regular intervals of twenty-eight days. Conception occurs after the menstrual period, while the ovum is in the Graafian vesicle, the Fallopian tubes, or the uterus The duration of pregnancy is forty weeks, or 280 days—that is to say, exactly to menstrual periods, $28 \times 10 = 280$.

The æstrual period of the rabbit comes on every ten days. Conception occurs during the æstrum. Gestation in the rabbit extends over three periods. Kindling takes place at the thirtieth day after impregnation, $10 \times 3 = 30$.

The æstrual period of the mare comes on every fourteen days. Conception occurs during the æstrum. Gestation in the horse extends over twenty-four periods. The mare foals at the 355th day after impregnation, $24 \times 14 = 356$.

The æstrual period of the cow comes on every twenty-two days. Conception occurs during the æstrum. Gestation extends over thirteen æstrual periods. Calving takes place on the 285th day, $22 \times 13 = 286$.

In all these instances, it will be seen that the period of gestation is some multiple of an æstrual or menstrual period. These calculations are made from animals taken promiscuously. The presumption is therefore in favour of the establishment, as an universal law extending to all mammalia, that the period of natural gestation is invariably composed of some multiple of the æstrual or menstrual periods. Besides the establishment of this law, these data point to the actual cause of the coming on of labour at its particular time in the mammalia. If in the human female abortions occur it is known that they very often occur at the time for the recurrence of the menstrual periods, and it is also known that in dysmenorrhœal or menorrhagic patients abortion is very prone to occur at the periods immediately following the conception. The first contractions of the uterus in labour in perfectly natural cases may be excited in a reflex form by the irritability of the ovaria, at the tenth period from conception.

The data for the calculations are taken from Professor Naegele, Mr. Girdwood, Tessier, and Lord Spencer.

Lancet, July 12, 1845, *p.* 55.

190.—*Case of Peculiar Laceration of the Vagina.* By Richard Doherty, Esq., M.D., &c. [Dr. Doherty communicates a case of fatal laceration of the vagina, which occurred near the close of gestation, without the existence of actual labour or any appreciable cause, and would appear to be unique in the annals of midwifery. Besides displaying the risks to which both mother and child are exposed when the promontory of the sacrum projects, it shows the supervention of an attack of uterine phlebitis, causing phlegmasia dolens,and threatening disorganization of the joints. At seven in the morning of Feb. 13, Dr. D. was called to Mrs. M'G., at her full time with the eighth child.]

On my arrival I found her moaning, pulseless, with cold extremities, and collapsed features, tossing about the bed. The hand of death was evidently upon her. The account I received was, that on the Monday previous she had been out walking, and was quite well, in hourly expectation of her confinement, which she thought was delayed many days beyond the usual period. At eight o'clock on the subsequent morning (Tuesday), profuse hæmorrhage had suddenly burst forth from the vagina, without any apparent cause, and blood was lost sufficient to fill a *pot de chambre*. Dr. Stevenson saw her shortly afterwards, and from the history given him, was first of opinion, it was a case of placental presentation, but on examination found that no dilatation of the os uteri had taken place. He applied a cold lotion, and administered an opiate. The discharge of blood then ceased, and during the following day (Wednesday) she had only a slight draining. On the morning of Thursday, however, at four o'clock, hæmorrhage again set in, and then, for the first time, she began to complain of pain, which was mistaken by the women around her for the pains of labour, so that when Dr. Stevenson was summoned, at half-past six o'clock, they told him they were sure that the child would speedily be born. He soon perceived they were in error, the os uteri not having undergone the least alteration, and appreciating the dangerous condition of the patient, requested her friends to obtain my assistance. When I entered the room, her appearance at once announced that she was at the point of dissolution, and as the bleeding had altogether ceased, I could only recommend a continuance of the stimulants and external warmth then in use. An apparatus for transfusion was not within reach. She died about ten minutes after my arrival.

[About an hour after the woman's death, an examination was commenced by passing the fingers into the vagina. The fœtal head lay on the brim of the pelvis, at the left side; cervix stretched to the utmost over it; os unacted upon.]

At the upper part of the vagina, at the right side, there were some clots of blood; when these were removed, the finger detected a breach in the vaginal wall, parallel with, and extending along the ileo-pectineal line, a part which was not in the least pressed on by the child's head. The brim of the pelvis was so narrowed by a projection of the promontory of the sacrum, that even if the os had been dilated, great difficulty would, most probably, have been experienced in performing the operation of turning. On cutting into the abdomen, the hand was passed around the uterus without detecting the slightest rent in any part of its substance. An incision was then made in its anterior wall, but as the placenta was thus exposed, we drew the womb forwards, and divided longitudinally its posterior surface. A full-grown male child was then seen, in a perfectly natural position, and with the liquor amnii still around it. It was extracted, and the chord divided. We made then a minute examination of the peritoneum. The portion covering the uterus was in a perfectly healthy condition;

no tear could be detected, no cribriform appearance discerned; nowhere was there traces of inflammation, nor was there effusion of blood into its cavity. But along the brim of the pelvis, at the right side, corresponding to the loss of substance we had observed by examination per vaginam, blood was found effused external to that membrane, and between it and the tissues lining the iliac fossa. There then was evidently the seat of the lesion, and from that laceration in the vaginal wall, blood must have proceeded. But in order to discover whether it could possibly have issued from the uterus also, we separated that organ from the vagina, and removed it from the body. On looking into its cavity, the placenta was observed spread over the anterior wall, and extending downwards, so as to cover completely the neck of the womb also. We peeeled it off, and it was then evident, that it had not been previously detached at any one point; indeed it was necessary to use a certain degree of force before I could even then thrust my finger through the mucus, by which the os uteri was occluded. When I had done so, that orifice appeared circular in its form, about as large as a sixpence, with a sharp defined margin. As it was thus proved that the sanguineous effusion could not have proceeded from the womb, it follows, the hæmorrhage must have had its origin solely in the laceration, which we discovered in the vaginal wall, and that such was the source of the eruption, is evinced by its being the only situation in which clots existed in the canal. I should observe, we found in the left labium an encysted abscess; from which we removed about an ounce of good pus. This abscess, most probably, arose from some local irritation, and had no connexion with the discharge of blood.

Dublin Journal of Medical Science, July 1845, *p.* 325.

ADDENDA.

The basis of a very rational plan of treating scrofula consists in the adminstration of alkalies, and the continued use of highly animalized diet. Chemistry has lately shown in an interesting manner the reason of this fact, which is, that phosphates are passed in the urine of scrofulous patients to an extent many times greater than natural. The reason for the avoidance therefore of vegetable diet, which, by forming lactic acid, tends to dissolve the earthy phosphates, and the persistence in the use of alkalies, which neutralize the acid in the system, is clearly shown.*

Mr. Tuson, of the Middlesex Hospital, has found from extensive inquiries, that salt, which, from the amount of chlorine contained in it, is probably highly beneficial in all cancerous diseases, is almost universally disliked by patients suffering under such affections. The terchloride of carbon he believes to have a remarkably modifying influence over the disease in such cases.†

It is stated that turpenture when made into an electuary with mucilage, honey, and a little magnesia, may be given without exciting the disgust and nausea, so frequently caused as ordinarily prescribed.‡

The infusion of tobacco has been used with much success in many cases of prurigo. In purulent ophthalmia also, and the scrofulous conjunctivitis of infants, it has been used with decided success, and may be resorted to with confidence, when other remedies have failed. The strength of the infusion for these purposes is double that used for enemata, viz. ʒ j. to oss. of boiling water, and shag tobacco proves more efficacious than pig-tail.‖

M. Velpeau has found that sulphuric acid with saffron forms an admirable caustic. The powerful cauterizing effects of the acid are not destroyed, but by the combination a black paste is formed, which hardens into a crust shortly after exposure to the air. The

* Dr. Cowan's Address, Prov. Trans. vol. 1, N. S. p. 38.

† Ibid, p. 35.

‡ Ibid, p. 114.

‖ Medical Gazette, June 20, 1845.

peculiar properties of this caustic are its combininggreat power, with facility of circumscribing its action, and it is stated also that the eschar thus formed, though deep, is quickly thrown off. In cancerous affections the peculiar and disgusting fetid odour was quickly destroyed, nor did any bad effects, indicating its absorption, arise during its use.*

At page 216 of our last Volume, we quoted from the *Lancet* an account by Mr. Barnes of M. Ricord's mode of operation in amputations of the penis. The editor of the *Dublin Journal of Medical Science* has recently called our attention to the fact that a similar mode of proceeding had long before been practised by the late Dr. Colles, an account of which is published in his "Practical Observations on the Venereal Disease." The blame, if any, must rest on M. Ricord; we merely, in the exercise of our duty, noticed the fact as an interesting one, and likely to be of considerable practical benefit. We are well aware that it is too much the custom in France to appropriate, without acknowledgment, discoveries made by British surgeons, and could, if needful, point out several instances of a similar breach of good faith.†

Some years ago, Mr. Greenhow, of Tynemouth, Northumberland, sent some remarks to the *Medical Gazette* "On the Internal Use of Sea Water." He has lately drawn the attention of the profession to its value in scrofulous affections. The most effectual mode of employing it consists in its combined use, both externally, in the form of tepid baths or sea-bathing, and internally. We think sea-bathing likely to be useful also in cancerous affections, where, as we have before noticed, there is such a remarkable aversion to the internal use of salt.‡

Dr. Simon, in 1843, notices having remarked cylinders of peculiar form in the urine of some albuminous patients. Dr. H. Bence Jones had observed these cylinders in Bright's disease before meeting with these remarks of Dr. Simon's. Since then he has not met with one case of this disease where these bodies were not present. He has hitherto found them most numerous in the second stage Dr. J. found them in five cases where no dropsy was or had been present, but where the urine was albuminous. Indeed, he states that he has never met with the cylinders without finding albumen also in the urine. In one case, oxalate of lime was also abundant, but this is not likely to have caused the cylinders, because of its occurring so frequently without producing these microscopic appearances. He thinks they are from effusion of liquor sanguinis into the ducts, produced by congestion, and thus that the fibrin coagu-

* Northern Journal of Medicine, Sept. 1845.

† Dublin Journal of Medical Science, Nov. 1845.

‡ Medical Gazette, July 4, 1845.

lating in the ducts produces the cylinders. "Further experience," says Dr. J., may show that simple congestion alone, without granular disease, is indicated by these cylinders, but at present, from their invariable appearance in Bright's disease, I should, when I met them in the urine, always suspect that granular degeneration of the kidney was taking place.*

M. Velpeau considers that the excruciating pain experienced in orchitis depends on a species of strangulation; the tunica albuginea, not yielding, compresses the swollen and inflamed testicle, and thus gives rise to the intense pain. He accordingly, acting on these views, recommends an incision into the tunica albuginea. He has performed it with success fifteen times, nor did permanent injury of the testicle occur in any one case.†

The liquor potassæ has been found of great service, given internally, in crusta lactea, and other pustular diseases. The dose in which it is given is from ten to fifteen or twenty drops three times a day. Very inveterate cases are stated to have been thus cured; as an external application, decoction of cinchona was found most useful.‡

Mr. Duncan M'Diarmid, an American surgeon, has found great benefit from a solution of emetic tartar applied externally in some pulmonary and other complaints.‖ The mode of application is by no means new. Dr. Hannay, in 1823, recommended this form of application, and in 1843 writes, "I still regard this lotion as a highly valuable application to the chest in pulmonary diseases." Dr. H. finds that the addition of gr. v. of hydr. oxymur. to the ounce of solution increases its power and efficacy.§

* Medical Gazette, June 13, 1845.

† Edinburgh Medical and Surgical Journal, October, 1845.

‡ Medical Gazette, June 13, 1845.

‖ Ibid, July 25th.

§ Monthly Journal of Medical Science, Oct. 1845.

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